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ABSTRACT

Characteristics distinguishing more effective from less effective public primary (grades 1 to 8) schools in Santo Domingo were studied, using a comparative case study design. The effectiveness of the school was determined by expert nomination and achievement tests in reading, mathematics, and writing. Socioeconomic status was controlled and three pairs of schools were formed, each containing a more effective and a less effective school. Two investigators studied each pair of schools for 16 weeks to determine the validity for these schools of each of 23 variables identified from previous research and to look for additional distinguishing variables. Ten additional variables were developed in pilot studies and used. Out of the potential 33, 26 were found to differentiate between good and poor schools. These were grouped into: (1) general school provisions; (2) direct provisions for motivating students; and (3) ensuring effective instruction. Most variables relating to effectiveness were subject to manipulation within the school, making improvement based on this research possible. The achievement tests in Spanish, and a socioeconomic analysis are appended. A 129-item bibliography is included. (SLD)

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SCHOOL EFFECTIVENESS
IN THE DOMINICAN REPUBLIC

Report of Research Conducted Jointly by:

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ABSTRACT

Problem: The problem was to determine characteristics which differentiate more effective from less effective public primary schools in Santo Domingo.

Methodology: The methodology was a comparative case study design. Three pairs of primary schools were identified, each pair consisting of one more effective and one less effective school. These identifications were accomplished by expert nomination and achievement tests in reading, mathematics and writing. Socioeconomic status was controlled. Two investigators studied each pair of schools over a period of 16 weeks. Using qualitative methods, their purposes were: (a) to determine the validity, for their pair of schools, of each of 23 variables reported from previous research and (b) to identify and verify additional variables which differentiate high from low effectiveness schools. A variable was considered valid only if all three teams, acting independently, agreed upon that variable as being positively related to effectiveness.

Results: Of the 23 variables from previous research and 10 new variables identified in this study, a total of 26 were found to differentiate good and poor schools. See the attached table for the more detailed results.

OVERALL FINDINGS

I. All three pairs of schools report strong support. (2)

- 1. strong and active leadership
- 13. educate each student as much as possible

II. Two pairs report strong, one medium support. (16)

- 2. positive school climate
- 3. sense of community
- 4. emphasis on and recognition of academics
- 6. clarity of purpose, mission, philosophy
- 8. considerable autonomy in school management
- 11. emphasis on staff development
- 12. participation and responsibility for students
- 15. safe and orderly environment
- 17. parental involvement and support
- 18. maximized learning time
- 19. evaluation of teacher performance
- 20. collaborative participation of teachers
- 21. student personal development, extracurricular
- 23. teachers are positive role models
- * 25. an effective guidance program
- * 28. good personal hygiene, teachers and students

III. One pair strong, two medium support. (7)

- 5. frequent monitoring of progress
- 9. efficient planning and scheduling
- 10. clear, enforced policies on discipline
- 22. emphasis on higher order skills
- * 26. an effective medical and dental program
- * 30. adequacy of the school library
- * 33. teachers are trained for primary teaching

IV. Three pairs medium support. (1)

- 7. high expectations for teachers, students

V. Two pairs strong support, one no support. (2)

- 14. core set of curriculum standards
- * 27. a satisfactory school plant

VI. One pair strong, one medium, one no support. (2)

- * 24. low student mobility
- * 29. presence of a pre-school year

VII. One pair strong support, two no support. (1)

- 16. staff stability

VIII. Three pairs, no support. (2)

- * 31. use of student teachers
- * 32. teachers not of local origin

* variable originated with pilot phase of this study.

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A. INTRODUCTION

The Dominican Republic: The People and the Economy^a

The Dominican Republic, which occupies the eastern two thirds (48,443.23 square kilometres) of the island of Santo Domingo (formerly Hispaniola) is Spanish-speaking and has diverse and complex ethnical characteristics.

Agriculture is the basis of the national economy. Approximately half of the country's export earnings derive from sugar. Coffee, tobacco, cocoa, bananas, pineapples, and other fruits are also exported. The heavy dependence of the Dominicans on agricultural exports in a world of unstable prices stimulated efforts at economic diversification.

Mining, and more recently new hotels and tourist facilities, along both the northern and southern shores, contribute most to this desired diversification. As well, business, commerce and manufacturing are growing with a consonant increase in banking and entrepreneurial activities.

The changing character of the economy from predominantly agriculture to one increasingly more diversified has had a major impact on the country's demography. Today, more people live in urban centers (52%) than rural areas. The migration to the two largest cities, Santo Domingo and Santiago, has been immense. For example, the population of the capital city, Santo Domingo, has essentially doubled since 1970, increasing from 820,000 in 1970, to 1,600,000 in 1987. Sizeable increases have also occurred in smaller cities such as La

^a The following description is based upon the perceptions of the research team, the references cited, and material presented in Wiarda and Kryzanek, 1982.

Romana, Bonao, and Puerto Plata, reflecting the growth in sugar, mining and tourism.

The Spanish spoken in the Dominican Republic is very clear, and it maintains elements belonging to classical Spanish as it was brought to the country by the Spanish colonists (see, for example, Comisión Dominicana Permanente para la Celebración del V Centenario del Descubrimiento y Evangelización de América, 1987).

The dominance of the Spanish language is matched by the centrality of the Catholic Church. With approximately 98 percent of the population Catholic, the church's influence is major in the areas of education and health.

Despite the problems of its historical development, Dominicans are a friendly people. They possess a sense of joy and passion that makes for a society of, for example, dedicated baseball fans and well attended carnivals and political demonstrations. For some observers, beneath these outward expressions of gaiety, friendliness and passion, there is a noticeable strain of quiet resignation and also perseverance. Dominicans have a vision of a better tomorrow, but experience has led them to be somewhat reluctant to take risks. After centuries of neglect, wars, repression, dictatorship, underdevelopment, intervention, and hurricanes, such reluctance should not be surprising: the Dominican Republic represents an uneasy joining of tradition and the modern, conflict and stability, and poverty and wealth.

Education in the Dominican Republic

Simply stated, Dominicans view education as "the gateway to the future, to modernization, stability, and wealth". Current and past administrations, freely elected by the people and representing different views, have all expressed their commitments to education and raised concerns about the apparent failure of the educational system. They pointed to the high rate of literacy, the staggering dropout rate, and the limited availability of preparatory vocational programs essential for the continuing economic diversification and growth of the country. Nearly one-third of the population, 15 years of age or older, are considered illiterate. Only 47% of the children complete sixth grade. Of those who do, only one in five does so in six years. Absenteeism is high; average attendance in rural schools is just 60%. Overcrowding is worrisome -- the national average is 59 students per class. Counter to accepted teaching and learning practice, the average for the first two grades exceeds that for the later grades. The number of failures at Grade one (nearly one in four students) is unconscionably high. As many as four out of ten children less than six years of age are inadequately fed, thus interfering with the ability of these students to learn. Instructional time appears to be insufficient to cover adequately the prescribed curriculum. A large number of students (70% in urban schools and 99% in rural schools) are without needed textbooks. So far, the governments appear to have been more successful in addressing the task of constructing new buildings (e.g., 490 new schools with a total of 1000 classrooms in 1979 [Wiardo & Kryzanek, 1982, p. 120]). The more formidable tasks, however, of overcoming literacy, encouraging school

completion, increasing attendance, alleviating overcrowding, reducing the failing rate, eliminating malnutrition, providing adequate instructional time and resources, and ensuring that skills and processes relevant and useful for work are taught, are yet to be more fully addressed.

The Dominican educational system, Grades 1 to 12, is organized in two levels.¹ The primary level includes the first eight grades, the secondary level the last four grades. In 1986/87, nearly nine out of ten students attended primary school. The majority, 85% attended public schools supported by the Ministry of State for Education. The remaining 15%, who for the most part are children from the upper middle and high social-economic classes, attended private schools. Clearly, as might be expected, there are educational advantages to attending such schools which, because of their favored economic position, are not confronted with the daily problems of malnutrition, illiteracy, dropouts, overcrowding, and lack of materials present in the public system.

Because of the distinct educational disadvantages inherent in the public school system, the observation that less than half the students complete Grade 6, and the desire to redress this situation, the present study was restricted to public primary schools. Consequently the material to follow is limited to these schools.

Public Primary School System

Intended for students 7 to 15 years of age, primary schools strive to equip students with fundamental skills in reading, writing, and arithmetic; to impart knowledge in core areas such as history, geography, civics and

¹The third or tertiary level, which includes universities and other forms of post secondary training programs is regulated by a set of special laws outside the law for grades 1-12.

natural sciences; to develop an appreciation for art, music, and other fine arts; and to promote the development of high-order skills which provide individuals the ability to analyze, synthesize, and evaluate information and ideas. Additionally, these schools include learning which provides an understanding of social and human relationships and what it means to be a citizen of a community and of the Dominican Republic. Students with a Grade 8 education are expected to have acquired basic life skills, at the very least, and an adequate preparation for secondary school or for "practical work". Primary schools are also expected to make special provisions for children with learning disabilities and/or emotional and social adjustment problems.

To meet these objectives and needs, the Ministry of State for Education operates most of these schools directly, though with permission, a sizeable number are operated by Catholic groups and some by local community organizations. The sharp increase in the number of school age children (44% for the period 1971 to 1981) requires that school buildings be used twice each day. Morning school begins at 8 and ends at 12, while afternoon school begins at 2 and ends at 4:30. Each morning and afternoon school has its own teachers: the principal may or may not be the same. Teachers are provided with a guide or syllabus which contains for each subject the topics, to be taught at each grade level and various suggestions for teaching and evaluation. Testing and promotion are left to the discretion of the teacher.

B. THE PURPOSE AND PROBLEM

A dilemma in many developing countries, like the Dominican Republic, is that educational practices are often based upon research carried out elsewhere, usually in more developed countries. This is so even when school conditions, language and culture differ widely between those involved in the research and those at the scene of application. Thus, at a time when many countries, such as the United States, Canada, and the United Kingdom, are achieving substantial school improvement through the application of the findings of the relatively new research approach referred to as "school effectiveness research", many other countries are left to wonder about an appropriate course of action for them. Should the findings from elsewhere be accepted and used or are totally new local findings required? If the latter, and if such massive research programs are not feasible locally, then is there any option but to pass by the potential benefits of this recent development?

Arising from this dilemma, the applied purpose of this study undertaken in the Dominican Republic was as follows:

- (a) to summarize the findings of research from the general literature which characterize crucial, manipulable differences between more and less effective elementary (primary) schools;
- (b) by direct study to test the validity of these findings from elsewhere in a Dominican setting; and

- (c) to determine variables related to school effectiveness, not included in the findings from elsewhere, which are important in a Dominican setting.

C. REVIEW OF THE LITERATURE:
RESEARCH ON SCHOOL EFFECTIVENESS

Research on school effectiveness, despite its prominence on the educational scene, is comparatively recent in origin. Indeed, the descriptor "school effectiveness" was first entered into the ERIC Thesauris in August, 1982. Some notable pioneer studies preceded that date (Weber 1971, Brookover and Lezotte, 1979, and Edmonds, 1979), but the bulk of the work has occurred in the 1980's.

Essentially this research tradition seeks to identify the variables which distinguish good from poor schools. The focus has been on elementary schools in poor urban areas. This has been so for two major reasons. First, because it is these schools which most offend the ideal of equal opportunity and, secondly, it is the efficacy of these schools about which the Coleman Report (Coleman et al, 1966) was so pessimistic.

The early studies in the school effectiveness tradition implicitly said that the massive, multivariate approach of Coleman restricted attention to variables for which data were readily available (such as school size and cost per pupil). Consequently, all he showed was that those particular variables were not accounting for much variance in pupil achievement. In reaction, the school effectiveness studies show: a) that some particular schools are good and others are poor in producing achievement and then, b) importantly reveal an understanding of why this is so through the use of more qualitative methodology.

Though a considerable variety of methods are used, the typical approach has been the comparative case study. One or more schools have been identified as high in effectiveness and one or more as low. The criteria for effectiveness also vary, but typically they have included achievement scores (such as test scores in all school subjects, in just the basics, or even in reading alone), of indirect indicators of school performance such as delinquency or attendance, expert nominations based upon various specified criteria, or some combination of these three measures. Once the high and low schools were identified they were usually matched, in pairs or groups, on bases such as socioeconomic status, school size and the like.

The search for meaning has usually proceeded by contrasting the two schools or sets of schools on whatever variables emerged from the settings as being potentially performance-related. Heavy reliance has been placed upon interviews, observations, and documentary analysis as data sources. Because of the applied motive of the researchers, special attention has been directed to variables which are manipulable in subsequent school improvement programs.

This tradition draws essentially upon three assumptions as stated by Bickel (1983, p.3):

(1) schools can be identified that are unusually effective in teaching poor and minority children basic skills as measured by standardized tests; (2) these successful schools exhibit characteristics that are correlated with their success and that lie well within the domain of educators to manipulate; (3) the characteristics of successful schools provide a basis for improving schools not deemed to be successful.

Considerable comment has centered on various weaknesses of the typical method employed. The most important of these criticisms are discussed later in

this section. Despite the criticisms, however, the large number of studies have produced "common findings with remarkable consistency" (Rosenholtz, 1985).

The most generally known results are those of the early Edmonds study (Edmonds, 1979). The five characteristics of effective schools he identified have been so widely used in school improvement programs that they have become known as the Edmonds Formula. They are: (a) a school principal who provides leadership and is attentive to the quality of instruction; (b) a pervasive and clearly understood instructional focus, (c) an orderly, safe climate conducive to teaching and learning; (d) high expectations for students' performance, conveyed by all staff; and (e) frequent evaluation and on-going monitoring of pupil progress.

Since the pioneering studies, the stream of research results has further explicated these early findings both through breaking down the early broad variables into more elemental ones and identifying new variables. Thus more variables which have considerable support can now be identified but, though more numerous, the accumulated set is largely consonant with early results in general tenor. Even after refinement, however, the variables are not necessarily mutually exclusive or independent. Causality is usually undetermined.

The first task of the present study was to identify those variables associated with school effectiveness which, on the basis of research to date, had at least some substantial support. The results are from highly developed countries as distinct from developing countries. This study sought to

determine whether the findings were valid in one example of a developing country, the Dominican Republic.

Variables Related to School Effectiveness

1. Strong and active leadership from the principal. (Clark 1980, Cohn & Rossmiller 1987, Curran 1983, Edmonds 1979, Evans 1983, Glenn 1981, Hallinger & Murphy 1986, Mortimore & Sammons 1987, Purkey & Smith 1983, Sapone 1983, Squires et al. 1981).

The leadership of the principal has emerged as one of the most powerful variables related to school effectiveness. The usual rationale is that most of the other important variables are implemented in practice, at least in part, through the directional, coordinative and motivational effects of strong leadership within the school. It also is seen as necessary to initiate and sustain a school improvement process. Some researchers qualify the variable as to the kind of strong leadership involved, such as instructional leadership or collaborative leadership, but in the present study preference is given to those researchers who adopted a more uni-dimensional definition for their variables. The qualifiers "instructional" and "collaborative," for example, are separated out below as numbers 4 and 20 respectively. Indeed, if one follows the other practice it would lead to adding qualifiers to leadership which which would include many of the other related variables.

2. Positive school climate. (Cohn & Rossmiller 1987, Curran 1983, Denbo 1982, Edmonds 1979, Evans 1983, Glenn 1981, Mackenzie 1983, Mortimore & Sammon 1987, Mortimore & Mortimore 1984, Rutter et al. 1979, Sapone 1983, Stedman 1987, Wynne 1984).

Critics of the school effectiveness research often cite this variable as a prime example of the "fuzzy" terminology employed in many studies (e.g. Cuban 1983). Certainly different studies use the phrase differently. They vary in meaning from overall "ethos" or "atmosphere" (Mortimore & Mortimore, 1984) to a broad category including many other variables from the present list (McCormack-Larkin & Kriteck, 1982) to "agreeable ways of doing things that have general support" (Rutter et al., 1979). Many use the phrase to refer to the affective dimension of the school social system: the warmth of feeling among staff and students. This more focussed definition is illustrated by Quinones (1985 p. 34) who says "School climate refers to the quality of life and human interaction in a school."

3. Sense of community. (Cohn & Rossmiller 1987, McCormack-Larkin 1985, Murphy & Hallinger 1985, Purkey & Smith 1983).

A sense of community has been defined as a sense of affiliation with a set of shared goals and objectives (Cohn & Rossmiller, 1987). Thus it serves as a group motivator for members. As Purkey and Smith (1983) point out, it also contributes to reduced alienation. The feeling of belonging and the shared norms combine to produce higher achievement.

4. Emphasis on academics and school-wide recognition of academic success.

(Breen 1984, Carlson 1983, Cohn & Rossmiller 1987, Denbo 1982, Edmonds 1979, Hallinger & Murphy 1986, Mackenzie 1983, McCormack-Larkin 1985, Mortimore & Mortimore 1984, Murphy & Hallinger 1985, Purkey & Smith 1983, Rosenholtz 1985, Rutter et al. 1979, Stedman 1987, Wynne 1984).

Effective schools have been found repeatedly to be characterized by this pervasive academic emphasis. It is evidenced through the substance of the principal's leadership, the norms inculcated in the students by the teachers, and the practices, both in the classroom and the school as a whole, which serve to honour the academic success of students.

5. Frequent monitoring of student progress. (Breen 1984, Carlson 1983, Denbo 1982, Edmonds 1979, Evans 1983, Farrar et al. 1984, Mackenzie 1985, McCormack-Larkin 1985, Mortimore & Sammons 1987).

As would be expected from the research on learning, effective schools are found to be characterized by frequent oral quizzes and written tests as a normal feature of the instructional style (Evans, 1983). This monitoring not only motivates and provides feedback to the students but provides teachers with the information required to make important instructional decisions.

6. Clarity of purpose/clear mission/philosophy of education. (Breen 1984, Cohn & Rossmiller 1987, Curran 1983, Evans 1983, Glenn 1981, Hallinger & Murphy 1986, MacKenzie 1983, Murphy & Hallinger 1985, Purkey & Smith 1983, Rosenholtz 1985, Wynne 1984).

In keeping with standard organization theory, effective schools were goal-oriented. In these schools a clear mission and philosophy of education guided the identification of specific short term objectives. The mission was realistic, clearly understood and widely accepted by teachers and students. Clark et al. (1980) point out that "public schools too often operate with (1) assumed or implicit goals; (2) multiple goals; (3) vague, abstract or

ill-defined goals. As a result, resources are diffused and no goal is attained." (p. 469).

7. High expectations for teachers and students. (Brookover & Lezotte 1979, Cohn & Rossmiller 1987, Curran 1983, Edmonds 1979, Evans 1983, Glenn 1981, Hallinger & Murphy 1986, Levine et al. 1984, Mackenzie 1983, McCormack-Larkin 1985, Mortimore & Sammons 1987, Murphy & Hallinger 1985, Purkey & Smith 1983, Rutter et al. 1979, Sapone 1983, Stallings & Mohlman 1981).

Social role theory emphasizes the importance in determining peoples' behaviour of the expectations of important others. This is borne out in school effectiveness research by the finding that high expectations, indeed, are found to induce high performance. The effect is particularly strong when the expectations are sufficiently persistent and persuasive to encourage the development of high self-expectations. Hallinger and Murphy (1986) conclude that "the principal is the key actor in promoting school effectiveness" (p. 332-33) on the basis of the significance of that role in communicating high expectations to teachers thus setting the tone throughout the school of high expectations for students.

8. School-site management. Considerable autonomy in determining and addressing school needs. (Mackenzie 1983, Pink & Wallace 1984, Purkey & Smith 1983).

Relative autonomy of the school from a larger system enables it to address the problems of building a school-specific culture favourable to academic performance (Purkey & Smith, 1983). In organizational terms this may be described as a loose coupling between the school and the district and a tight

coupling within the school. Since many of the variables found to be associated with school effectiveness are social in nature, their growth is dependent upon the existence of a group which has high impact upon its members. The school can become such a high impact group but the most the outside system can do is enhance rather than direct such development. This is best accomplished when the school has the freedom to develop its own uniqueness.

9. Efficient planning and scheduling of activities. (Cohn & Rossmiller 1987, Glenn 1981, Mackenzie 1983, McCormack-Larkin 1985, Mortimore & Sammons 1987, Mortimore et al., 1984).

It is through efficient planning and scheduling of activities that accomplishment of school goals are enhanced. Academic goals are more likely to be achieved through a careful, deliberate approach than through haphazard and chaotic events. This finding is less often reported than many others, which may suggest that the relationship is weak or that it is so obvious as to escape notice.

10. Clear policies on behaviour and discipline that are enforced. (Brookover & Lezotte 1979, Cohn & Rossmiller 1987, Curran 1983, Denbo 1982, Glenn 1981, Mackenzie 1983, Mortimore & Mortimore 1984, Murphy & Hallinger 1985, Purkey & Smith 1983, Rutter et al. 1979).

Effective schools have created a school and classroom atmosphere within which reasonable standards of student behaviour are followed. Students internalize these standards because they are clearly understood and consistently enforced. When an "agreed upon standard of behaviour and

discipline" prevails schools can devote less time to keeping order and more to promoting achievement (Rutter et al., 1979).

11. Emphasis on staff development activities. (Clark 1980, Cohn & Rossmiller 1987, Edmonds 1979, Evans 1983, Glenn 1981, Levine et al. 1984, Mcckenzie 1983, Purkey & Smith 1983, Sapone 1983, Stedman 1987, Stow 1979).

Staff development programs which are closely integrated with the curriculum and with teachers' needs are characteristic of effective schools. The specific content of the programs is less important than insistent focus on teaching and learning (Stow, 1979). "Training has too often been provided in after-school workshops that focus on abstract topics that the teachers feel to be marginally relevant," says Stedman (1987). "In contrast, most effective schools used practical, on-the-job training that was tailored to specific needs of staff members and students." (p. 220).

12. Opportunities for participation and responsibility for students. (Mackenzie 1983, Rutter et al. 1979, Stedman 1987).

Effective schools tend to involve the students in as many aspects of school life as possible, extending to them full membership in the school and class group. Though their roles may be functionally different from the adult members of the group they are accepted as valued contributors. Through this means the students are encouraged to develop a sense of personal responsibility for matters affecting the welfare of the school and class. Especially, they are urged to accept primary responsibility for their own learning; to be active rather than passive in the learning process.

13. Commitment to educate each student as completely as possible. (Clark 1980, Cohn & Rossmiller 1987, Curran 1983, Murphy & Hallinger 1985, Stedman 1987).

This variable has significance in indicating the importance of attempting to provide personal attention to each student, despite the economic and social needs to group students into sizeable classes. The various techniques of individualization of instruction can be employed to challenge each student to maximum achievement related to personal goals. Implementation of this variable would seem to be related to successful realization of other variables, such as leadership, staff development, and the like.

14. A core set of curricular standards. Emphasis on basic skills. (Brookover et al. 1979, Carlson 1984, Clark 1980, Levine et al. 1984, Hallinger & Murphy 1986, Mackenzie 1983, McCormack-Larkin 1985, Murphy & Hallinger 1985, Purkey & Smith 1983, Wynne 1984).

The emphasis on basic skills or core curriculum standards is a frequently reported correlate of school effectiveness. In the poor inner-city environment of the schools most commonly studied, the efficacy of of this approach is not surprising. Effective schools coordinated basic skills across grade levels with clear minimum standards at each level and within each subject area (Purkey & Smith, 1983). Some writers emphasize, however, that the sole focus on basic skills, to the exclusion of higher order skills (see Variable 22), is undesirable (Levine et al., 1984).

15. Safe and orderly learning environment. Good conditions for learning. (Breen 1984, Carlson 1983, Cohn & Rossmiller 1987, Evans 1983, Mortimore &

Mortimore 1984, Murphy & Hallinger 1985, Purkey & Smith 1983, Rutter et al. 1979).

This variable commonly appears in the literature, but the wording encourages confusion with Variable 10, "Clear policies on behaviour and discipline that are enforced." To distinguish the two variables the words "safe" and "orderly", as characteristics of a good learning environment, are taken to refer to the psychological impact of the environment upon the student, that is the environment should be non-threatening and structured.

16. Staff stability. (Mackenzie 1983, Mortimore & Sammons 1987, Purkey & Smith 1983).

The importance of staff stability in effective schools is explainable in terms of the salience of variables describing various social characteristics of the school group, such as climate, expectations, and sense of community. "Frequent transfers are destructive and likely to retard, if not prevent, the growth of a coherent and ongoing school personality. Moreover, conditions of staff stability permit long-range planning and coordination" (Purkey & Smith, 1983:443).

17. Parental involvement and support. (Clark 1980, Cohn & Rossmiller 1987, Curran 1983, Edmonds 1979, Evans 1983, McCormack-Larkin 1985, Mortimore & Sammons 1987, Purkey & Smith 1983, Sapone 1983, Stedman 1985).

Effective schools ensured that the parents and community were aware of the school's goals and the students' and teachers' responsibilities. Activities may involve letters or newsletters to parents, home visits, parent conferences at school on the student's progress and specific notification of parents when

the student's performance slips (Stedman, 1985). Essentially such a program enlists the parents as active supporters of their child's progress in learning.

Despite the number of studies reporting this variable to be related to effectiveness, other studies have found no relationship (Hallinger & Murphy, 1986). Brookover and Lezotte (1979) perhaps add some clarification, however, in their finding that effective low - SES schools are characterized by low overall levels of parent involvement but high levels of parent-initiated contact.

18. Maximized learning time. (Breen 1984, Brookover et al. 1978, Cohn & Rossmiller 1987, Hallinger & Murphy 1986, Mackenzie 1983, McCormack-Larkin 1985, Mortimore & Mortimore 1984, Purkey & Smith 1983, Stallings & Mohlman 1981).

Effective schools allocate, organize, and protect instructional time in order to maximize students' opportunity to learn (Hallinger & Murphy, 1986). A greater proportion of the day is given over to academic subjects; a greater portion of class time engages students in active learning activities (Purkey & Smith, 1983).

19. Evaluation of teacher performance and of curriculum. (Curran 1983, Sapone 1983, Stedman 1985).

Support for evaluation of the two central ingredients of instruction is surprisingly infrequent in the literature. Many variables relate to the improvement of teaching and of curriculum but relatively few specifically to evaluation as a step in the improvement process. Whether this is by oversight

or by an actual weakness of the relationship is not clear. If it is the latter, it is conceivable that some effective schools have avoided formal evaluations as part of their improvement programs because of the frequent control emphasis implied in much evaluative practice. If so, those studies which do show a relationship with effectiveness may have encountered non-threatening forms of evaluation as are referred to in the following variable.

20. Collaborative planning, implementation and evaluation with collegial relations for teachers. (Cohn & Rossmiller 1987, Evans 1983, Glenn 1981, Mackenzie 1983, Purkey & Smith, 1983, Mortimore & Sammons 1987, Rosenholtz 1985, Sapone 1983, Stedman 1987, Wynne 1984).

Collaboration in the central processes of conducting schools has been widely found to be related to school effectiveness. Principals and teachers work together; intellectual sharing among teachers and students is encouraged. Barriers are broken down. A sense of unity is promoted (Purkey & Smith 1983). Teachers are involved in curriculum planning and participate in developing their own curriculum guidelines. Schools in which teachers are consulted on policy issues as well as issues affecting them directly appear to be more successful (Mortimore & Sammons, 1987). Further, Stedman (1987) reports the use in effective schools of such practices as an executive team including teachers, a steering committee of teachers from each grade level, team teaching and team planning.

21. Emphasis on student personal development including extra-curricular activities. (Evans 1983, Levine et al. 1984, Sapone 1983).

Student personal development has been found related to effectiveness in a few studies. Levine et al. (1984) report that they found students' personal growth to be as important in school effectiveness as their cognitive development. Indicative of this emphasis are practices involving provision of assistant principals, guidance counselors, and released teacher time for the provision of guidance and orientation services. Sapone (1983) found in a survey of opinion from school-related people that a strong extracurricular program ranked high among responses. While this variable has less support than most others in the present list, it is considered worthy of further study.

22. Emphasis on higher order skills and critical thinking skills.

(Levine et al. 1984, Mackenzie 1983).

Evidence does exist for higher order skills being related to school effectiveness (Levine et al., 1984), though the support is weak, to say the least. When found it is usually at levels higher than elementary education. This observation comes as no surprise, however, when it is recalled that the usual operational definition of effectiveness is achievement in the basics.

If a broader definition of effectiveness were employed (Mackenzie, 1983), the evidence might be expected to increase. The variable is included, then, more as a potentially important hypothesis than as an established variable.

23. Teachers present themselves as positive role models. (Rutter et al., 1979).

The support for the above variable is not strong. Modelling is widely recognized within teacher education programs, however, as an important form of

teacher - pupil influence so that it might be expected to obtain more support if it were to be focussed on directly. As for the last two variables, it is included for hypothetical importance.

Criticism of Effective Schools Research

Despite the successes of the school effectiveness research a number of criticisms have been raised about aspects common to many studies in the area.

First, critics have challenged the two empirical propositions on which the effective schools research rests: (a) that there are verifiable examples of exemplary schools that serve urban poor minority children; and (b) that there are specific concrete characteristics that determine the performance of these schools (Ralph & Fennessey, 1983).

Second, the means for measuring effectiveness has been highly criticized. The concern is that the definition of school effectiveness has been severely limited to instructional effectiveness and in particular to academic gains as measured by standardized tests. This may be simply too narrow a basis to utilize in evaluating school effectiveness. Cuban (1983) writes, "School effectiveness ignores many skills, habits and attitudes beyond the reach of paper and pencil tests" (Cuban, 1983:15). He also argues that, "In pursuit of improved test scores, less attention is devoted to areas viewed as non-academic: music, arts, speaking skills, personal growth, self-esteem. Although I am a long advocate of basic skills instruction for inner-city children, I am nevertheless concerned over the tunnel vision that accompanies the single-minded quest for high test scores" (Cuban 1983:16).

In discussing this same problem, Vincenzi and Ayer (1985) point out that one difficulty in ranking schools using achievement scores is obtaining a school-level achievement that fairly represents the school. Comparing a K-8 school achievement score with a K-4 school achievement score is misleading. This is because "attendance and behaviour problems increase with grade level and these variables affect achievement. Due to problems like this, a K-8 school will always be at a disadvantage competing with a K-4 school in terms of a school-level achievement score" (Vincenzi & Ayer, 1985:125).

Other critics who express concern over using achievement scores as a measure of effectiveness are Rowan et al., 1983, Farrar et al., 1984, Serow and Jackson, 1983 and Houlihan, 1983. The latter urges researchers to explore other more qualitative aspects such as: (i) development of positive relationships; (ii) self-concepts/self-pride; (iii) attitudes; (iv) overall performance of the school. After all, "one cannot explain school success or failure with simple, catchy, quick-fix methods" (Houlihan, 1983:14).

Third, the majority of the research studies have been done in inner-city elementary schools with predominant minority populations. This limits the generalizability of the results. Also, as the organization of a secondary school is structurally very different from an elementary school, critics argue that the results of the research to date on effective schooling have very little applicability to secondary schools. Farrar et al. (1984) discuss in detail the distinctions between elementary and secondary schools in stressing this point. According to them, parental involvement and support, emphasis on basic skills and instructional leadership of the principal are characteristics

more often found in elementary than in secondary schools. Based on a study of 27 elementary schools and 23 secondary schools, Firestone and Herriott (1982) concluded that elementary and secondary schools differ significantly in what they regard as effective schools.

Fourth, there is some criticism that the terminology used by the researchers of effective schools is "fuzzy" (Cuban 1983:15). Cuban adds that terms such as "leadership" and "climate" defy a definition.

Fifth, critics have drawn attention to purported weaknesses in the research designs employed by effective schools researchers. Purkey and Smith (1983) claim that effective schooling studies which employ regression analysis of school mean achievement scores to identify positive and negative outliers have several weaknesses. They caution that this method of research is likely to result in some "false positive and negative residual outliers." Rowan et al. (1983) point out the following shortcomings in the design of effective school research:

- The research design has usually been "contrasted groups" - comparing 'effective' and 'ineffective' schools. This design has helped to identify factors that covary with school effectiveness but has provided little information on the casual relationships among the variables.
- Global comparisons. The research has aggregated data to the school level and thus described the school-level characteristics. This approach has ignored the important within school variation in outcomes.
- Effect sizes. Effective schools research provides little information on the size of the relationships between specific school-level variables and school effectiveness.
- Generalizability. The results of effective schools research is not generalizable to all schools because: (1) studies are not based on random samples but rather on "unusually effective or ineffective schools,"

(ii) studies say more about effectiveness in small schools, (iii) most research is done in urban poor elementary minority schools.

Given the findings of effective schools research in relation to the criticisms of it, a major question emerges. To what extent can the findings of these researchers be used to guide school improvement efforts within schools? It may be possible to implement school improvement plans based on effective schools research bearing in mind three critical points: (i) that effectiveness has been defined narrowly and measured by test scores; (ii) that the findings of the research are not meant to be fitted to a formula and used as a recipe; and (iii) that the kinds of schools to which the findings are applied must resemble the kinds upon which the research was conducted -- except for the effectiveness level.

D. METHODOLOGY

1. Overview of the design

The plan and procedures for identifying the factors which contributed to an explanation of the differences in academic performance between high and low performing schools involved a number of steps, as described below.

As will be seen from these descriptions, both quantitative and qualitative research methods were employed. Within the meaning of quantitative methods researchers typically include research designs and activities such as randomized experiments, quasi-experiments, sample surveys, paper and pencil objective tests, structured questionnaires and interviews, and univariate and multivariate statistical analyses. Qualitative methods include ethnography, case-studies, open-ended tests and questionnaires, unstructured interviews, observations, and descriptive statistics (Reichardt & Cook, 1979). Each of these approaches - quantitative and qualitative - has acquired advocates who argue that their preferred method is best for answering research, development, and evaluation questions, and for resolving policy issues in education. In contrast, others suggest that the choice of method should not be determined by one's own predilection for one approach over the other but rather by the demands of the research situation at hand (Howe 1985, Reichardt & Cook 1979, Rist 1977). Such was the case in the present study. The diversity of such demands required the use of both quantitative and qualitative methodology. Included were such quantitative needs as developing objective reading,

arithmetic, and writing tests for confirming the initial nominations of more and less effective schools. Also included were the more qualitative needs of assessing the comparative strengths of a number of complex variables through interviewing students, teachers, and support personnel, principals and observing activities within the more and less effective schools. Together, both approaches provided insights that neither alone could provide.

In overview, the methodology was a comparative case study design. Three pairs of primary schools were identified, each pair consisting of one more effective and one less effective school. These identifications were accomplished by expert nomination and achievement tests in reading, mathematics and writing. Two investigators studied each pair of schools over a period of 16 weeks. Using qualitative methods their purposes were: (a) to determine the validity, for their pair of schools, of each of the 23 variables reported from previous research and (b) to identify and verify additional variables which differentiate high from low effectiveness schools. A variable was considered valid only if all three teams, acting independently, agreed upon that variable as being positively related to effectiveness. These procedures are described in greater detail below.

2. School selection

Given the intensive data collection needs of the study, the size of the research team, the intent that team members develop a high level of research expertise, and the constraints of time and cost, it was necessary to limit the main qualitative data collection to three pairs of schools. Each pair comprised a more effective and a less effective school. Since there were

potential differences in performance ascribable to urban versus rural locations, and to help reduce costs, the sample schools were selected from those located in the city of Santo Domingo. Further, to avoid future problems in interpretation that may have come through comparison of a private school with a public school, only public schools were considered for selection. Additionally, in view of the fact that approximately 53% of public school students "drop out" of school before completing Grade six, the sample of schools was further restricted to primary schools.

a. School nominations

The sample schools were selected in two stages. First, since academic performance data were unavailable and the cost of obtaining such data from all schools was prohibitive, the primary public schools in Santo Domingo were classified as most effective and least effective by a group of eight senior administration and supervisory officials within the Santo Domingo public school system. Using a list of the 221 public primary schools, these officials separately nominated the ten schools which they considered "academically most effective" or "good" and the ten schools which they considered "academically least effective" or "poor". The nominations were then collated to identify the schools most frequently nominated in each category.

Close agreement (at least four out of eight judges) was found for 18 schools, 14 of which were nominated as most effective, four as least effective. Consideration of socio-economic information for these schools led to the deletion of seven of the most effective schools from further consideration, leaving a screening sample of 11 schools with comparable socio-economic status

(SES) from which to make the final sample selection. It was particularly important to control for SES, a strong correlate of performance, so that SES differences would not masquerade or otherwise confound subsequent findings.

b. Test construction

To further clarify the academic performance of the 11 retained schools and to obtain actual performance data to be used to make the final school selections, reading and arithmetic tests were administered to the fourth grade students in the 11 schools. Grade four was chosen as the grade level to test since: (a) this level corresponded to the UNESCO definition for literacy; (b) the Secretary of State for Education had adopted this definition of literacy, and (c) beyond this level the incidence of drop outs was most pronounced.

The need to construct new reading and arithmetic tests was established following a review of several tests used in various public and private schools. Comparison of the test coverage with Secretary of State for Education program outlines revealed that available tests failed to examine all of the required or core content. Further, many of the questions in these tests did not require any comprehension by the student, or the vocabulary was either too simple or too complex for the fourth grade level. Consequently the decision taken was to construct and pilot test new tests in reading and arithmetic. As well, to provide further verification of the level of academic performance in the six schools selected, a writing test was constructed and later administered. At the same time, to provide some information related to school climate, a

variable considered in the qualitative phase of the study, an attitude test was also constructed.

(i) Reading tests

Three aspects of reading were tested: vocabulary, reading comprehension - fast and simple, and reading comprehension - complex. To begin, the frequency of occurrence of words used in first through fourth grade reading texts used in the Santo Domingo public schools was determined. At the same time, several experts in various fields were consulted to determine the words or vocabulary necessary for comprehension of text material in the following four content areas: communication, mathematics, natural sciences, and social sciences.

Using this word usage information, words were selected for the vocabulary component, and text and associated questions were developed for the two comprehension components. Care was taken to ensure that the vocabulary and comprehension items matched the fourth grade core curriculum and represented the words and material in the four content areas. Items were written at three levels of difficulty: easy, intermediate, and difficult. Altogether a pool of 88 five-option, multiple-choice items was constructed: 50 vocabulary, 21 short passage-single comprehension question, and five long passage - three comprehension questions and one long passage - two comprehension questions.

Pilot test. The 88 items were distributed across three pilot test forms balanced, as far as possible, for content, difficulty, and estimated time to complete (see Appendix A). Each form was then reviewed for clarity of instructions and suitability of wording by two practicing primary school

teachers. For each form, a separate pilot test sample consisting of two or three classes in a higher performing school and a like number in a lower performing school was selected using the nomination data, excluding the pool of eligible schools identified for selection of the final sample (see above), and staff knowledge of the primary schools in Santo Domingo. The pilot forms were administered during a regular class period by the research team. Pencils for recording answers directly on the test were provided to the students.

No difficulties in administration were encountered; the time limit (30 minutes) was adequate for all students to attempt all items. The students' responses were entered into a computer file with 100% verification. Item analyses were then performed separately for each form and, within form, for each type of class. These analyses were completed using the ITEMAN Version 2.01 micro-computer package (Assessment Systems Corporation, 1986) on an IBM-AT microcomputer maintained at the UNPHU Research Institute.

Examination of the means revealed that, as expected, the more effective pilot classes out performed the less effective pilot classes on each subtest in each form (see Appendix A, Table A.1.2). With two exceptions, the proportion of students correctly responding to each item was greater for the more effective sample than for the less effective sample. The item-subtest point-biserial correlations for the correct option were all positive.

Final form. Based upon the pilot test results, 27 items were selected for the final form of the reading test. The first 15 items comprised the vocabulary aspect, followed by six items for reading comprehension one and two passages each with three questions for reading comprehension two. The expected

mean scores for more and less effective schools were, respectively, 20.9 (77.4%) and 11.1 (41.1%) for the total test. The estimated internal consistency (K-R-20) was .81. The difference in means and the estimated reliability were considered adequate to successfully distinguish the more effective from the less effective schools within the screening sample of 11 schools eligible for final selection. At the same time, the number of easy items included was considered sufficient to avoid potential problems attributable to the non-response of individuals, particularly poorer performing students. A copy of the final reading test is included in Appendix A.

(ii) Arithmetic test

A similar test construction strategy was employed to develop an arithmetic test of appropriate difficulty and suitable for discriminating between more and less effective schools. With reference to the official program outline for grade four mathematics, 43 four-option multiple choice items were constructed to measure the core content at this grade level. The incorrect options reflected errors commonly made by students when executing the basic operations with whole, fractional, and decimal numbers; converting fractions to decimals and decimals to fractions; as well as Roman numerals to numbers and numbers to Roman numerals; interpreting place value notation; solving simple word problems; and working with simple set notation.

Pilot test. Employing the same procedures used for reading, the 43 items were distributed across two pilot test forms balanced for content and difficulty (see Appendix A). Space was provided to the right of each question for the students to work out their answers. As for reading, the forms were

reviewed for suitability of instructions and layout by the two practicing primary school teachers. Separate pilot test samples were chosen for each form, and the tests were administered by members of the research team.

During the test administration, it became evident that the students were experiencing unanticipated difficulties with the test. These difficulties appeared to be attributable to two main factors. First the symbols, written in hand because they were not available on the typewriter used to prepare the master copy of each form, were not clearly reproduced in printing. Second, the teachers of the pilot classes indicated that students in the fourth grade were more familiar with hand written tests in which the students rewrote the questions and presented their answers in the open space provided.

Consequently, a second set of pilot test forms was prepared in which the multiple-choice format was eliminated and the typewritten format was replaced with a handwritten format. Different pilot test samples were chosen for this second pilot test. Students were allowed to rewrite the questions before working their answers in the space provided.

Analysis of the two sets of pilot sample data revealed no significant differences between the two formats (typewritten multiple-choice versus handwritten open-ended) for both forms (t-tests; .20 level of significance). It was felt that the difficulties experienced with the first format could be overcome by producing a clearer, consistently typed (numbers and symbols) test, and by providing a clearer set of instructions. Consequently, the typewritten multiple-choice format was adopted for the final form, with the results of the

item analyses of the first pilot responses used to select the final form items.

Displayed in Table A.2.2, Appendix A are the means and standard deviations for the two multiple-choice forms pilot tested. Compared to the performance in reading, the performance in arithmetic was somewhat lower. On only one form, B, is the performance of the more effective class reliably greater ($p < .05$) than the less effective class. However, despite the overall low level of performance, there were across the two forms an adequate number of items with the desired characteristics (percent correct for more effective classes greater than percent correct for less effective classes; positive point-biserial correlation for correct response within each group and a distribution of easy, intermediate, and difficult items) to construct a final form of appropriate difficulty and with the desired content coverage.

Final form. The final arithmetic test, a copy of which is included in Appendix A, contained 20 items. Care was taken to maintain the representation of the official core content for grade four, and to have a test which would discriminate between more and less effective schools. Toward this end, given the selected items, the estimated mean scores for more and less effective schools were, respectively, 11.7 (58.4%) and 6.9 (34.3%). Although lower than for the final reading test, the estimated internal consistency, .72, was considered adequate for this study in which schools rather than individuals were to be compared.

(iii) Writing test

The same procedures used to construct the reading and arithmetic tests were employed for writing. Altogether, 69 short completion items, referenced to seven selected components of the recently revised official writing program for Grade 4, were developed. The selected components - use of letters (e.g., b versus v, y versus ll, c versus k versus q); use of capital letters; accentuation, punctuation, spelling, and ordering of words; and concordance of words - represented the more basic elements of the core curriculum at the fourth grade level.

Pilot test. The 69 items were distributed across two pilot forms (see Appendix A) and administered to more effective and less effective classes following the same procedures used for reading and mathematics. No administration difficulties were encountered.

The means and standard deviations for both forms and types of classes are listed in Table A.3.2, Appendix A. For both forms, the mean performance of the effective class was greater than the mean performance for the less effective class. The more effective class outperformed the less effective on 51 of the 69 items. For each item, the point-biserial correlation for the correct option was positive.

Final form. Thirty-eight items were selected for the final writing test a copy of which is included in Appendix A. The estimated mean scores were 22.6 (59.4%) for more effective schools and 18.5% (48.7%) for less effective schools, with an estimated internal consistency of .79.

(iv) Attitude test

As mentioned earlier, one of the qualitative variables considered was school climate. To help assess this variable, an attitude toward school scale was developed. At the same time, two other scales were constructed, the first dealing with self-concept, the other with attitude toward one's family. It was postulated that the students in more effective schools would possess a different, if not more positive, attitude toward each of these three referents (Goodlad, 1983; Houlihan, 1983).

Items were developed so that for the self-concept scale, students with a positive self-concept would agree with statements that reflect positive perceptions of their physical stature and features (body concepts), as well as their psychological (internal feelings) and social (relation to others and their environment) well-being; and disagree with statements that reflect negative aspects of the same dimension. A favorable attitude towards school corresponded to agreement with statements that reflect positive perceptions of teachers, school companions, school and class facilities, and behavior associated with learning; and disagreement with negative statements about these same components. Similarly, a positive attitude toward family was indicated by agreement with statements that reflect positive perceptions of parents, brothers and sisters, and grandparents; and disagreement with negative statements about these family members.

In total, 104 statements -- 35 self-concept, 39 school, and 30 family -- were developed. This pool of statements was reviewed by a panel of experts comprised of seven psychologists and three guidance-counsellor educators

working at UNPHU. Each panel member separately checked each item for clarity of the identification of the attitude object, direction of polarity, and appropriateness of wording. Revisions were made as necessary.

Three response options with which the students could indicate whether or not they agreed with a statement were provided for each item. The response alternatives were presented as three faces -- one "smiling", one "neutral", and one "frowning". This format, employed in other studies with young students, was used to provide a pleasant, somewhat more informal approach, and to help avoid the idea that, for each item, there was only one correct answer for all students.

Pilot test. The 104 items were distributed across two forms balanced for sub-scale. Within each form, the items were randomly ordered. Further the order of the alternatives was randomized to avoid response sets. Two separate samples, consisting of two or three classes each, were selected so as to represent a range of academic ability. Unlike the academic tests which in previous school effectiveness studies had consistently differentiated less effective from more effective schools, there was no clear indication that such was the case for attitudes toward self, school, and family. Consequently, the pilot test samples were undifferentiated with respect to school effectiveness.

The pilot forms were administered in the sample classes by members of the research team. No difficulties were encountered although the teachers of the classes raised the question that the results may differ if the tests were orally and individually administered rather than self-administered in a group (class) situation.

The composition of each form, together with the sub-scale means, standard deviations, and internal consistency (Cronbach's α) are presented in Appendix A (see Table A.4.1). In this case, the multiple response option of the ITEMAN test analysis package was employed when completing the item analyses. Using the item-level results from the first pilot test, 17 items with positive, corrected for polarity, item sub-scale correlations were selected for attitude toward self, 17 for attitude toward school, and 18 for attitude toward family for a second pilot test. The results of this pilot test were then to be used to select from 10 to 15 items per subscale for the final form of the attitude scale.

The second pilot study was completed using a single form comprised of the 52 items identified in the first pilot. To test the suggestion made by the teachers, the second pilot test was both individually and group administered. In each of the three sample schools, the students in one class, randomly chosen, were individually tested orally by a member of the research team. The remaining class(es) were group administered tested with only the instructions and sample items read aloud by the research team member.

Comparison of the item-level responses and the sub-scale means and standard deviations revealed very little difference between the two administration modes (see Appendix A, Table A.4.2). Therefore, given the shorter time required for group administration than for individual administration, the decision was taken to group administer the final form of the attitude scale. Using the item results from the group administration, the ten items possessing the strongest (positive) item sub-scale correlations were

selected for each subscale. A copy of this final test is provided in Appendix A.

c. Selection of six schools for qualitative study

The final reading and arithmetic tests were administered to all fourth grade classes in the 11 schools eligible for selection for the qualitative component of the study. The tests were administered during the spring term (prior to the fall qualitative data collection period) by members of the research team on two consecutive days. No administration difficulties were encountered; differences between the number of students tested each day were attributable to absenteeism.

The means and standard deviations for the 11 schools are listed in Table 1 together with the effectiveness designation obtained from the nominations procedure. As shown, means for the schools initially identified as more effective were greater than the means for the schools identified as less effective, while, for arithmetic, two of the less effective schools had means which placed them above schools initially classified as more effective.

School pairs were thus formed primarily on the basis of their reading scores, their initial effectiveness categorization, and their socio-economic comparability (see below). Initially, school A was paired with school H, B with K, and D with I. School C was eliminated due to its poor mathematics performance, and school J was not initially considered because of its apparent small enrollment. Early visits to school K revealed that, unlike the other five schools, it was a new school that had just opened. Members of the community, proud of its new school, were quite involved in the school's

Table 1
Means and Standard Deviations
1. Reading and Arithmetic
Sample of Eleven Schools Eligible
for Qualitative Phase
2. Writing
Sample of Six Schools Identified
for Qualitative Phase

School	Initial Nomin. ^a	Reading			Arithmetic			Writing		
		n	X	S.D.	n	X	S.D.	n	X	S.D.
A* (1A)	ME	73	17.15	4.24	79	11.68	3.28	40	21.98	5.03
B** (2A)	ME	119	16.82	4.47	119	11.71	3.40	117	19.06	5.63
C	ME	81	16.47	3.90	81	8.88	2.93	-	-	-
D*** (3A)	ME	41	15.49	5.46	41	11.85	3.06	35	25.54	5.14
E	ME	68	15.15	4.48	73	10.68	3.20	-	-	-
F	ME	47	14.94	4.70	51	10.24	3.52	-	-	-
G**	LE	26	14.54	3.16	26	10.12	2.36	29	17.41	3.21
H* (1B)	LE	60	13.62	5.21	52	6.69	4.06	46	19.93	5.79
I	LE	95	12.68	5.55	119	10.66	3.36	-	-	-
J*** (3B)	LE	15	11.60	3.76	15	10.87	2.83	53	17.30	4.97
K	LE	91	11.42	5.08	92	9.04	3.11	-	-	-

* Selected Schools - Pair 1: 1A and 1B

** Selected Schools - Pair 2: 2A and 2B

*** Selected Schools - Pair 3: 3A and 3B

^aME - more effective school; LE - less effective school

operation, including selection of teachers. Further, there was still a number of new houses being built within the school's catchment area. Atypical in comparison to its paired school, it was replaced by school G as shown in Table 1. It also became necessary to replace school I with school J. Unfortunately, when the school visits began, the observation team inadvertently visited J rather than I. However, as shown, the number of fourth grade students in school J at the time of the qualitative data collection, 53, was greater than formerly believed.

In the case of each pair of schools, the mean reading score for the more effective school was significantly greater than the mean reading score for the less effective school ($p < .01$)^a. The differences in mean arithmetic score between schools A and H and schools B and G were significantly in favor of the more effective school ($p < .01$); for the remaining pair (D vs. J), the observed difference was not significantly different from zero. Also shown in Table 1 are the writing results for the six selected schools. Similar to reading, the mean writing performance for the more effective school was significantly greater than the mean performance for the less effective school in each school pair ($p < .01$). Taken together, these results confirm the initial categorization of the schools within each pair as more or less effective.

^a The significance of differences between means of the more and less effective schools was tested using a two-tailed t -test. The unpooled estimate of error variance was employed in each case, with the degrees of freedom determined using Welch's approximation, and rounding down to the nearest whole number (Glass & Hopkins, 1984, p. 240). The unpooled variance estimate and Welch's approximation to the degrees of freedom were used given the lack of homogeneity of variance (F test; .05 level of significance) coupled with the unequal numbers of students in the schools compared.

d. Socio-economic comparability

Several different pieces of information were obtained which together provided an indication of the comparability of the socio-economic status of the family of the students enrolled in the six schools selected for the qualitative phase of the study. First, as shown in Table 2, the average monthly income per family was estimated to be 250 pesos (the minimum wage in the Dominican Republic at the time this information was collected) by the principals in five of the schools and 300 pesos by the principal in the sixth school. The six principals reported that, typically, the parents of their students worked as laborers, handymen, and maids (see also Table B.1, Appendix B). Five principals described the educational level of the typical parent as primary; the sixth indicated the typical parent educational level was technical.

3. Qualitative study

(a). Selection of variables. A review of the literature identified 23 variables which had been found in previous research to be related to effectiveness in elementary schools. These variables, which are listed in Table 3, served as the initial set of variables to be considered as possible discriminators between the three schools identified as more effective and the three schools identified as less effective.

(b). Preparation of instrumentation. Once identified the variables were analyzed and discussed by the research team in preparation for the qualitative study which was to follow. Each variable or characteristic was first defined and then studied to identify the sources from which evidence of the variable

Table 2
Socio-Economic Status of
Six Sample Schools

Indicator/Level	School Pair					
	1A	1B	2A	2B	3A	3B
Average monthly income	250	250	250	250	300	250
Educational level of parents	technical	primary	primary	primary	primary	primary
Number of children/ family						
Average	4.4	5.1	4.8	5.2	3.8	6.2
Range	2-12	2-5	1-11	2-13	2-12	2-20
Method of Transportation to school						
Walk	30	10	28	27	29	32
Bicycle	0	1	0	2	0	0
Public transp.	0	2	2	0	0	0
Private transp.	0	2	0	0	2	2
Type of House						
Cardboard/metal roof	0	0	0	-	2	0
Wood/metal roof	30	2	30	-	7	9
Block/metal roof	0	6	0	-	13	18
Block/cement roof	0	7	0	-	9	5

^aInformation provided by principal

^bInformation provided by student

^cFrequency counts

Table 3

Characteristics of Effective Schools
Literature Review

1. Strong and active leadership from the principal. (Clark 1980, Cohn & Rossmiller 1987, Curran 1983, Edmonds 1979, Evans 1983, Glenn 1981, Hallinger & Murphy 1986, Mortimore & Sammons 1987, Purkey & Smith 1983, Sapone 1983, Squires et al., 1981)
2. Positive school climate. (Cohn & Rossmiller 1987, Curran 1983, Denbo 1982, Edmonds 1979, Evans 1983, Glenn 1981, Mackenzie 1983, Mortimore & Sammons 1987, Mortimore & Mortimore 1984, Rawyers 1984, Rutter et al., 1979, Sapone 1983, Stedman 1987, Wynne 1984)
3. Sense of community. (Cohn & Rossmiller 1987, McCormack-Larkin 1985, Murphy & Hallinger 1985, Purkey & Smith 1983)
4. Emphasis on academics and school-wide recognition of academic success. (Breen 1984, Carlson 1983, Cohn & Rossmiller 1987, Denbo 1982, Edmonds 1979, Hallinger & Murphy 1986, Mackenzie 1983, McCormack-Larkin 1985, Mortimore & Mortimore 1984, Murphy & Hallinger 1985, Purkey & Smith 1983, Rosenholtz 1985, Rutter et al., 1979, Stedman 1987, Wynne 1984)
5. Frequent monitoring of student progress. (Breen 1984, Carlson 1983, Denbo 1982, Edmonds 1979, Eubanks & Levine 1983, Evans 1983, Farrar et al., 1984, Mackenzie 1985, McCormack-Larkin 1985, Mortimore & Sammons 1987)
6. Clarity of purpose/clear mission/philosophy of education. (Breen 1984, Cohn & Rossmiller 1987, Curran 1983, Evans 1983, Glenn 1981, Hallinger & Murphy 1986, MacKenzie 1983, Murphy & Hallinger 1985, Purkey & Smith 1983, Rosenholtz 1985, Wynne 1984)
7. High expectations for teachers and students. (Brookover & Lezotte 1979, Cohn & Rossmiller 1987, Curran 1983, Edmonds 1979, Evans 1983, Glenn 1981, Hallinger & Murphy 1986, Levin et al., 1984, Mackenzie 1983, McCormack-Larkin 1985, Mortimore & Sammons 1987, Murphy & Hallinger 1985, Purkey & Smith 1983, Rutter et al., 1979, Sapone 1983, Stallings & Mohlman 1981)
8. School-site management. Considerable autonomy in determining and addressing school needs. (Mackenzie 1983, Pink & Wallace 1984, Purkey & Smith 1983)
9. Efficient planning and scheduling of activities. (Cohn & Rossmiller 1987, Glenn 1981, Mackenzie 1983, McCormack-Larkin 1985, Mortimore & Sammons 1987, Mortimore 1984)
10. Clear policies on behaviour and discipline that are enforced. (Brookover & Lezotte 1979, Cohn & Rossmiller 1987, Curran 1983, Denbo 1982, Glenn 1981, Mackenzie 1983, Mortimore 1984, Murphy & Hallinger 1985, Purkey & Smith 1983, Rutter et al., 1979)

11. Emphasis on staff development activities. (Clark 1980, Cohn & Rossmiller 1987, Edmonds 1979, Evans 1983, Glenn 1981, Levine et al., 1984, Mackenzie 1983, Purkey & Smith 1983, Sapone 1983, Stedman 1987, Stow 1979)
12. Opportunities for participation and responsibility for students. (Mackenzie 1983, Rutter et al., 1979, Stedman 1987)
13. Commitment to educate each student as completely as possible. (Clark 1980, Cohn & Rossmiller 1987, Curran 1983, Murphy & Hallinger 1985, Stedman 1987)
14. A core set of curricular standards. Emphasis on basic skills. (Brookover et al., 1979, Carlson 1984, Clark 1980, Levine et al., 1984, Hallinger & Murphy 1986, Mackenzie 1983, McCormack-Larkin 1985, Murphy & Hallinger 1985, Purkey & Smith 1983, Wynne 1984)
15. Safe and orderly learning environment. Good conditions for learning. (Breen 1984, Carlson 1983, Cohn & Rossmiller 1987, Evans 1983, Mortimore 1984, Murphy & Hallinger 1985, Purkey & Smith 1983, Rutter et al., 1979)
16. Staff Stability. (Mackenzie 1983, Mortimore & Sammons 1987, Purkey & Smith 1983)
17. Parental involvement and support (Clark 1980, Cohn & Rossmiller 1987, Curran 1983, Edmonds 1979, Evans 1983, McCormack-Larkin 1985, Mortimore & Sammons 1987, Purkey & Smith 1983, Sapone 1983, Stedman 1987)
18. Maximized learning time (Breen 1984, Brookover et al., 1978, Cohn & Rossmiller 1987, Hallinger & Murphy 1986, Mackenzie 1983, McCormack-Larkin 1985, Mortimore & Mortimore 1984, Purkey & Smith 1983, Stallings & Mohlman 1981)
19. Evaluation of teacher performance and of curriculum. (Curran 1983, Sapone 1983, Stedman 1985)
20. Collaborative planning, implementation and evaluation with collegial relations for teachers. (Cohn & Rossmiller 1987, Evans 1983, Glenn 1981, Mackenzie 1983, Purkey & Smith 1983, Mortimore & Sammons 1987, Rosenholtz 1985, Sapone 1983, Stedman 1987, Wynne 1984)
21. Emphasis on student personal development including extra-curricular activities. (Evans 1983, Levine et al., 1984, Sapone 1983)
22. Emphasis on higher order skills and critical thinking skills. (Levine et al., 1984, Mackenzie 1983)
23. Teachers present themselves as positive role models. (Rutter et al., 1979)

might be expected to come (e.g. students, teachers, records). Additionally the indicators of the degree of presence of the characteristic (e.g. nature of student interaction) and the research procedures to be followed to obtain the evidence (e.g. interview, observation, scrutiny of documents) were established for each variable. The resulting compilation is shown in Table 4, entitled "Interview and Observation Schedule". This schedule served as the guide for the main qualitative data collection phase of the study.

(c). Training of investigators. Training of the team began with lecture and seminar learning of the general methodology and techniques of qualitative research. The central reference book used was Lincoln and Guba (1985). Special attention was focussed upon the case study, interview and observation techniques, documentary analysis, and the various procedures for maximizing the validity of the data. Lengthy discussions were held concerning each of the 23 variables to develop clarity of meaning and manifestations in the schools, and to develop the schedule shown in Table 4. The next stage, referred to as the Pilot Round, was actual practice in the schools. Four teams of two investigators were each assigned to a pair of schools, one identified as high effectiveness, the other as low in effectiveness, seeking evidence concerning the 23 variables. Evidence was recorded and later discussed with colleagues to check on reliability and to further clarify the concepts and techniques.

In addition to the training purpose of the Pilot Round, investigators were asked to pay special attention to variables, other than the 23, which seemed to differentiate the good and poor schools within their pair. As will be reported later, 10 new variables were put forward by one or more investigators on the

Table 4

Interview and Observation Schedule

Characteristics	Definition	Sources	Indicators	Procedures
1. Strong & active leadership.	Knows what is happening. He/she has control though not necessarily dominating.	Teachers, Principal, Students.	Scheduling. curriculum and extra-curricular planning. Good organization.	Interviews. Observations.
2. Positive school climate.	Feeling of warmth Warmth in inter-personal relationships among students, teachers and principal.	Students, Teachers, Parents, Principal, Auxiliary Staff.	Quantity and quality of communication (hostile and/or friendly). Includes recess time. Knowledge of each other.	Interviews. Observations.
3. Sense of community.	Feelings of belonging of all members of the school community.	Students, Teachers, Principal, Parents.	Attendance at meetings. Existence of groups and mixed committees. Concern for school improvement.	Interviews observations Review of documents, meetings, minutes of meetings).
4. Emphasis on and recognition of academics.	Learning is the centre of interest and concern.	Teachers, Students, Records.	Displays of the best work. Honour rolls, classroom organization, inter-class contests, students' notebooks.	Observation.
5. Frequent monitoring of progress	Measurement of the learning results with no more than a month between testing.	Teachers, Students, Records, Homework.	The number of exams and quizzes. Teacher's grading of homework and special assignments.	Documented test results. Observation of classroom practises.

Characteristics	Definition	Sources	Indicators	Procedures
6. Clarity of purpose, mission, philosophy.	The principal, teachers and students are aware of the basic objectives of the school.	Documents, students, teachers, and principal.	Goals are clearly stated in written form. Goals are stated in practical terms for ready use in guiding activities.	Review of documents. Interviews.
7. High expectations for teachers and students.	What the school (principal's office) expects from the students: achievement and other behavior.	Programs, Parents, Teachers, Students, Principal.	Existence of goals or standards known by everybody (both behavioral and academic).	Interviews. Observations.
8. Considerable autonomy in school management.	Ability to exert efficient management of the school itself with considerable independence from the layer school system. The school is well organized.	Parents, Students, Teachers, Community.	Educational practices originated within the school. Development of beneficial extra-curricular activities. Existence of facilities. obtained with own funds.	Observation. Review of documents. Interviews.
9. Efficient planning and scheduling of activities.	The effective activities are those that allow the achievement of the objectives.	Reports on planning and execution.	The existence of written plans at both the school and classroom level.	Review of documents.
10. Clear, enforced policies on discipline.	Standards of student behavior are clearly specified and students are required to meet those standards.	Written rules, Students, Teachers.	Student behavior is compatible with and contributive to the academic goals of the school.	Observation of behavior. Interviews regarding knowledge of standards.

Characteristics	Definition	Sources	Indicators	Procedures
12. Participation and responsibility for students.	Participation and responsibility in the educational process as a whole.	Students.	Students are active in the learning process. Assigned work for special situations. Committees. guiding activities.	Observation. Interviews.
13. Educate each student as much as possible.	Teacher committed to individualization of instruction as much as is feasible in the class situation.	Teachers, Principals, Parents, Students.	Teachers' awareness of the special needs of each student. Teachers spend extra time at recess or after school with individual students.	Interviews. Observation.
14. Core set of curriculum standards. Emphasis on basic skills.	Certain basic skills are specified as being essential. Students are expected to master them.	Student notebooks, Teachers, Principals.	The basics are taught mastery is encouraged.	Interview. Examine written specification of basics required at each grade level.
15. Safe and orderly environment.	The learning environment should be structured and non-threatening.	Students.	Students do not show fear.	Observation.
16. Staff stability.	The average length of service of teachers, auxiliary staff and the principal.	School records, Teachers, Staff files, Auxiliary staff, Administrative staff.	Length of employment in the school	Review of files. Interviews.

Characteristics	Definition	Sources	Indicators	Procedures
17. Parental involvement and support.	Parents are involved in activities that favor the integral development of their children.	Parents, Principals, Teachers, Students.	Support for the measures undertaken by the school Effort toward children's participation and their achievement. Contribution to the children's adequate behavior.	Interviews.
18. Maximized learning time.	Allocated time to learning activities are maximized. Allocated time is effectively utilized.	Teachers, Students.	School calendar. Course and class plan. Students notebooks. Frequency of activities. Distractions from allocated class time.	Observation of utilization of time.
19. Evaluation of teacher performance.	The administrator and other persons in charge keep record of its progress. Teachers are regularly evaluated.	Principal, Teacher in charge of courses.	Evaluations are held regularly, for example, four times a year.	Review of schedules of evaluation and results.
20. Collaborative participation of teachers.	Teachers share activities and academic experience.	Teachers, Principal.	Meetings are held frequently where serious problems are treated. Collaboration in planning, selection of materials and evaluation of activities.	Observation. Interview.

Characteristics	Definition	Sources	Indicators	Procedures
21. Emphasis on student personal development, extra-curricular activities.	Teachers are concerned with developing all aspects of each student, not only the academic side.	Teachers, Principal.	Artistic, cultural, folklore and sporting activities are organized. Visits to art galleries, national theatre, national parks, such as Los Haitises, La Pelona and la Saona. Visits to towns and historic places.	Interviews. Observations.
22. Emphasis on higher order skills.	A broad range of activities require the students to think rather than just memorize. Frequently, students manifest dissident opinions without the intention of being disrespectful.	Students.	The method used; if students memorize only. Whether the student has to understand, solve problems, apply knowledge, analyze and infer.	Interviews. Observation.
23. Teachers are positive role models.	The teacher behaves as a coherent model of behavior, a good example of the goals the school stands for.	Teachers, Principal, Students, Auxiliary staff, Parents.	Whether teachers are models of behavior; if their behavior reflects what they teach.	Interviews.

basis of the preliminary evidence obtained. These were then added to the previous 23 so that as the main data collection phase was entered there were 33 variables to be tested.

(d). Procedures for data collection. The main data collection took place in two phases, each of four weeks. The three pairs of schools, identified in Table 1 and contrasting in effectiveness, were each assigned two investigators.

During the first phase (4 weeks) the two investigators assigned to each pair of schools visited the good and poor schools alternately, devoting one day per week to the visits. Thus each school was visited twice by each investigator. Through this first phase, the two investigators for each pair of schools worked completely independently of each other, that is, they visited the schools on different days and they did not discuss their findings. This design feature sought to maximize individual insight without outside influence.

At the end of the first phase, the mid-point integration meeting was held. Each investigator came to that meeting with tentative conclusions formulated (and recorded) for all of the 33 variables about which evidence had been forthcoming. At that time the two investigators assigned to each pair of schools compared their tentative conclusions, noting variables on which they were agreed, and discussing those on which they disagreed or on which they had insufficient evidence. After this integration within each team, there followed a sharing of results across the three teams. Thus at this mid-point it became apparent which variables had agreement across the three teams and which

required more focus in the second half of data collection. Also at this point problems arising from the first phase experience were raised and discussed. Many modifications and associated re-training resulted.

The second phase of data collection involved the same investigators studying the same schools but was considerably more focussed on certain variables. The same pattern of school visits was maintained so that in total, across the two phases, each investigator visited each school eight times. Altogether, then, 48 school days of study were conducted.

After completion of the second phase data collection, the final integration took place. Members of each team had been in constant communication with each other during this phase and now finalized their conclusions about each of the 33 variables. Information had not been shared across teams, however, since the mid-point integration, again to minimize spurious influence. At this final point results across the three teams were revealed. Overall patterns were discussed, variables positively related to effectiveness were categorized and implications for practice were identified.

E. RESULTS

1. New variables

The study had both a verification and a discovery purpose. The latter sought to identify new variables, in addition to those identified from previous research. Ten such new variables were named, each by one or more investigators, as being potentially related to school effectiveness. These variables were:

1. low student mobility
2. an effective guidance program
3. an effective medical and dental program
4. a satisfactory school plant
5. good personal hygiene, teachers and students
6. presence of a pre-school year
7. adequacy of the school library
8. use of student teachers
9. teachers not local in origin
10. teachers are trained for primary teaching.

These 10 variables were then added to the previous 23 so that the main data collection was concerned with verification of 33 variables.

2. Codification of findings

Although the qualitative approach to research resists the quantifying of evidence, especially at early stages of the research process, at later stages

it becomes necessary to employ some rough codifications to enable the sharing of experience among the investigators. For this purpose, the present study denoted the relationship between a particular variable and school effectiveness as strong(++), medium (+) or no relationship (o). Negative relationships were acknowledged as possible but unlikely and, indeed, none did emerge in the final conclusions.

3. Midpoint results

After the first four weeks of data collection, team members compared their tentative conclusions with each other and those results for each team were shared with the other teams. These tentative results are shown in Table 5, entitled "Midpoint Results".

4. Main findings

Table 6, entitled "Final Data from Teams: Overall Conclusions" portrays the findings based on the actual team reports. The findings are reorganized in Table 7, entitled "Overall Findings", according to the strength of their relationship with school effectiveness. The criterion employed for accepting a variable as being related to school effectiveness was that all three teams found a positive relationship. Twenty-six of the 33 variables met this criterion. Within the 26, two were the strongest in that all three teams reported a strong relationship. From there the strength of the relationship is graded down according to the number of teams reporting "strong" and "medium."

It is noted that five of the 26 variables showing a positive relationship were originated in this study.

Table 5
Midpoint Results*
by Investigator and Team

Team	I		II		III		I	II	III
	A	B	C	D	E	F			
Investigator									
1. strong and active leadership	++	+	?	++	++	++	++	++	++
2. positive school climate	+	++	++	++	++	+	++	++	+
3. sense of community	++	o	o	++	++	+	++	++	+
4. emphasis and recognition for academics	++	o	+	+	++	?	++/o	+	++/?
5. frequent monitoring of progress	o	++	++	+	+	?	o/++	++	+/?
6. clarity of purpose, mission, philosophy	++	+	++	++	+	+	++	++	+
7. high expectations for teachers, students	+	+	+	o	+	?	+	+	+/?
8. considerable autonomy in school management	++	++	++	+	++	?	++	++	?
9. efficient planning and scheduling	o	++	++	++	+	+	?	++	+
10. clear, enforced policies on discipline	++	?	o	o	++	+	?	+	+
11. emphasis on staff development	o	++	+	o	o	+	++	+/o	+
12. participation and responsibility for students	+	++	+	++	+	?	++	++	+
13. educate each student as much as possible	+	++	+	++	+	?	o	++	+/?
14. core set of curriculum standards	+	+	?	o	+	o	+	?/o	+
15. safe and orderly environment	o	o	++	++	+	++	o	++	+/?
16. staff stability	++	++	o	o	++	?	++	o	o
17. parental involvement and support	+	++	+	++	o	?	+	+/?	o/?
18. maximized learning time	o	o	++	++	++	+	o	++	++/+
19. evaluation of teacher performance	o	?	+	++	+	?	?	++	+/?
20. collaborative participation of teachers	++	o	?	o	++	+	+	?/o	+
21. student personal development, extracurricular	++	+	+	++	+	+	++	++	+
22. emphasis on higher order skills	+	o	?	++	+	?	+	?/++	+
23. teachers are positive role models	o	+	o	o	+	+	o/+	?	+
24. low student mobility	++	++	o	?	o	+	++	?	+
25. an effective guidance program	++	o	+	++	++	++	++	+/?	++
26. an effective medical and dental program	-/?	--	+	o	++	++	+	+/o	++
27. a satisfactory school plant	o	o	++	++	++	++	o	++	++
28. good personal hygiene, teachers and students	o	++	++	++	o	++	+	++	o/++
29. presence of a pre-school year	--	-	++	++	?	o	-	++	?/o
30. adequacy of the school library	++	++	++	?	++	+	++	++/?	+
31. use of student teachers	?	?	?	?	?	o	?	?	?/o
32. teachers not local in origin	o	+	o	?	+	?	?	o/?	+
33. teachers are trained for primary teaching	no evidence collected						?	?	?

*Symbols used are ++ for a strong positive relationship, + for a medium positive relationship, o for no relationship, ? for insufficient data for even a tentative conclusion, and -- or - for negative relationships.

Table 6
Final Data from Teams:
Overall Conclusion

	TEAM	TEAM	TEAM	Conclusion*
	I	II	III	
1. strong and active leadership	++	++	++	3S
2. positive school climate	++	++	+	2S1M
3. sense of community	++	++	+	2S1M
4. emphasis on and recognition for academics	++	+	++	2S1M
5. frequent monitoring of progress	+	++	+	1S2M
6. clarity of purpose, mission, philosophy	++	++	+	2S1M
7. high expectations for teachers, students	+	+	+	3M
8. considerable autonomy in school management	++	++	+	2S1M
9. efficient planning and scheduling	+	++	+	1S2M
10. clear, enforced policies on discipline	+	++	+	1S2M
11. emphasis on staff development	++	++	+	2S1M
12. participation and responsibility for students	++	++	+	2S1M
13. educate each student as much as possible	++	++	++	3S
14. core set of curriculum standards	++	++	o	2S1O
15. safe and orderly environment	++	++	+	2S1M
16. staff stability	++	o	o	1S2O
17. parental involvement and support	++	++	+	2S1M
18. maximized learning time	+	++	++	2S1M
19. evaluation of teacher performance	++	++	+	2S1M
20. collaborative participation of teachers	++	++	+	2S1M
21. student personal development, extracurricular	++	++	+	2S1M
22. emphasis on higher order skills	+	++	+	1S2M
23. teachers are positive role models	++	++	+	2S1M
24. low student mobility	++	o	+	1S1M1O
25. an effective guidance program	++	+	++	2S1M
26. an effective medical and dental program	+	+	++	1S2M
27. a satisfactory school plant	o	++	++	2S1O
28. good personal hygiene, teachers and students	+	++	++	2S1M
29. presence of a pre-school year	o	++	+	1S1M1O
30. adequacy of the school library	++	++	+	2S1M
31. use of student teachers	o	o	o	3O
32. teachers not local in origin	o	o	o	3O
33. teachers are trained for primary teaching	+	++	+	1S2M

* Symbols used are S for Strong relationship (++), M for medium relationship (+), and o for no relationship.

Table 7

Overall Findings

- I. All three pairs of schools report strong support. (2)
1. strong and active leadership
 13. educate each student as much as possible
- II. Two pairs report strong, one medium support. (16)
2. positive school climate
 3. sense of community
 4. emphasis on and recognition of academics
 6. clarity of purpose, mission, philosophy
 8. considerable autonomy in school management
 11. emphasis on staff development
 12. participation and responsibility for students
 15. safe and orderly environment
 17. parental involvement and support
 18. maximized learning time
 19. evaluation of teacher performance
 20. collaborative participation of teachers
 21. student personal development, extracurricular
 23. teachers are positive role models
 - * 25. an effective guidance program
 - * 28. good personal hygiene, teachers and students
- III. One pair strong, two medium support. (7)
5. frequent monitoring of progress
 9. efficient planning and scheduling
 10. clear, enforced policies on discipline
 22. emphasis on higher order skills
 - * 26. an effective medical and dental program
 - * 30. adequacy of the school library
 - * 33. teachers are trained for primary teaching
- IV. Three pairs medium support. (1)
7. high expectations for teachers, students
-
- V. Two pairs strong support, one no support. (2)
14. core set of curriculum standards
 - * 27. a satisfactory school plant

VI. One pair strong, one medium, one no support. (2)

- * 24. low student mobility
- * 29. presence of a pre-school year

VII. One pair strong support, two no support. (2)

- 16. staff stability

VIII. Three pairs, no support. (2)

- * 31. use of student teachers
- * 32. teachers not of local origin

* variable originated with pilot phase of this study.

Variables not meeting the criterion of unanimity among the teams may well be important ingredients of effectiveness, of course, but this study cannot put forward the claim. Other studies have, in fact, supported many of them so they may be examples of false negative results or they may not be situationally valid in the Dominican setting.

5. Assessment of attitudes

Shown in Table 8 are the means and standard deviations for each of the three sub-tests of the attitude scale administered to the fourth grade students in the six schools included in the qualitative phase of the study. In only one case, schools 1A and 1B were the differences between schools consistently in the predicted direction. For school pair 2, the differences were in the opposite direction for two of the subscales (family, school). Given the lack of consistency, the suggestion that students in more effective schools would possess a more positive attitude toward themselves, their family, and their school is not supported, in the present situation.

Table 8
Means and Standard Deviations
Attitudes
Sample of Six Schools Identified
for Qualitative Phase

School	n	Sub-Scale ^a					
		Self		Family		School	
		X	s.d.	X	s.d.	X	s.d.
1A	80	22.49*	4.72	26.96*	3.40	25.80*	2.56
1B	45	18.91	3.37	21.43	4.60	23.67	2.14
2A	110	21.15	3.71	19.55**	5.89	21.47**	4.17
2B	30	19.78	4.85	25.15	4.06	23.06	2.68
3A	36	21.59*	3.94	26.26	3.48	24.15	2.87
3B	60	17.09	3.22	26.85	3.98	23.11	1.86

^aEach subscale comprised 10 items.

* $p < .05$; more positive attitude in more effective school.

** $p < .05$; more positive attitude in less effective school.

F. CONCLUSIONS

1. The 26 variables found to be related to school effectiveness were examined by the team for content to see if some form of categorization could be developed. Purkey and Smith (1982) have classified school effectiveness variables as (1) process-learning and (2) organizational structure, whereas Hersh (1981) has used (1) instruction and (2) curriculum, Mackenzie (1983) has grouped variables into (1) leadership (2) efficacy and (3) efficiency. The preference in this study was toward a more applied orientation. Three categories (1) general school provisions (2) direct provision for motivating students, and (3) ensuring effective instruction, were formed as shown in Table 9.
2. It is remarkable that the findings from these Dominican schools are as similar as they are to schools in settings markedly different in language, culture and degree of national development. While it is true that most research from the United States has been conducted in inner city or minority schools, even so the situational differences are substantial. Of the 23 variables taken from previous research, 21 have been found valid in Santo Domingo schools.
3. Despite the similarity in findings just noted, it is interesting that five additional new variables have been identified, tested and found to be valid in this study. These variables may represent relationships distinctive to the Dominican setting or they may just not have been identified in previous studies

conducted elsewhere. Only research elsewhere, seeking evidence on these five variables can provide a secure answer.

When the substance of the five variables is examined, however, some speculation seems warranted. They concern conditions and services that might be expected to be generally present in a context above a certain level of poverty, as would be the case even in inner city schools in the United States: an effective guidance program, good personal hygiene for teachers and students, effective medical and dental programs, an adequate school library and teachers trained for primary teaching. Where these are generally present, in both good and poor schools, they obviously would not discriminate between schools of different quality. It may well be, then, that being beneath a certain socio-economic level, where these conditions do not universally exist results in their presence being associated with good schools and their absence with poor schools.

4. The causation problem exists with the findings of this study just as with other studies in this research tradition. It cannot be concluded that all of the 26 variables found to be related to effectiveness are, in fact, causally related. Nevertheless, the *prima facie* case for causation is compelling for many of the variables, such as strong and active leadership, maximized learning time, and clarity of purpose. For a few others a reverse causality seems possible, though scarcely plausible. It is possible that "considerable autonomy in school management" is a condition caused by a high achieving school (in that it has high credibility with hard pressed supervisors) rather than one

that contributes to high achievement, but such an explanation seems somewhat contrived.

The more likely possibility is that some variables may not cause high achievement but have only a correlative relationship; the particular variable and achievement are both caused by some third unknown factor or by another variable in the list. An obvious candidate for an outside confounding factor is socio-economic status. Care was taken to match schools on SES, however, so it should not have played such a role in the present study. As to causative relationships among the variables, some ready possibilities exist. It can be seen how an effective medical program could contribute directly to high achievement but it could also be postulated that both the achievement level and the medical program are caused or initiated by a strong, active principal.

5. Despite such speculations on causation it seems clear that the findings are sufficiently secure to serve as the basis for school improvement programs. At worst, some effort may be spent on implementing a few non-contributive variables amongst the many which produce the desired result.

Table 9

Categories of Variables Related to School Effectiveness

Category 1. General School Provisions

1. strong and active leadership
2. positive school climate
3. sense of community
6. clarity of purpose, mission, philosophy
7. high expectations for teachers, students
8. considerable autonomy in school management
10. clear, enforced policies on discipline
11. emphasis on staff development
15. safe and orderly environment
17. parental involvement and support
20. collaborative participation of teachers
25. an effective guidance program
26. an effective medical and dental program
28. good personal hygiene, teachers and students

Category 2. Direct Provision for Motivating Students

4. emphasis and recognition for academics
12. participation and responsibility for students
21. student personal development, extracurricular
23. teachers are positive role models

Category 3. Ensuring Effective Instruction

5. frequent monitoring of progress
9. efficient planning and scheduling
13. educate each student as much as possible
18. maximized learning time
19. evaluation of teacher performance
22. emphasis on higher order skills
30. adequacy of the school library
33. teachers are trained for primary teaching

G. IMPLICATIONS FOR PRACTICE

The single recommendation of this study is that the findings be used as the basis for a school improvement project. Most of the variables positively related to school effectiveness are subject to manipulation within the school though some require the active support of the larger school system. Examples of the kinds of behaviours contributive to each variable, as extracted from the reports of the school investigators, are presented in the previous section. These are intended to be useful in adding the kind of concreteness that an implementation program would require.

The pronounced similarity of the findings of this study to those of studies in other countries where culture and language are substantially different suggests that it is not important to limit the implementation of the findings to schools that are strictly comparable to the schools studied. Thus, the breadth of a school improvement program could, if feasible in practical terms, be applied beyond the Santo Domingo schools to schools in other cities in the Dominican Republic. It could even be extended to include rural schools, at least until specific research can be done to confirm or modify the variables crucial to effectiveness in those schools.

School systems in other countries have employed a variety of strategies in implementing school improvement programs. Based upon this experience, the following general outline of steps is proposed.

Structure

- Step 1 Establish an overall Steering Committee for the project, comprised of school officials known for leadership in improvement and known to place high importance on decentralized participation.
- Step 2 Through the above mechanism, make known widely the general purposes of the program and invite schools to indicate an interest in participation.
- Step 3 Group the schools expressing interest into units not exceeding 10. Each group would be responsible for planning and implementing its own program with the central Steering Committee providing general guidance, resource people and whatever financial resources may be available.

Process

- Step 1 Awareness.
- Within each grouping of schools all teachers and principals should study and discuss at considerable length the variables which have been found to be related to effectiveness.
- Step 2 Planning change.
- For each variable an inventory should be constructed of practical implementation behaviours or practices.

Step 3

Implementation timetable.

An implementation timetable should be constructed. This might well involve selection of a small number of variables as an initial focus with others staged at specific intervals.

Step 4

Feedback.

Several kinds of monitoring of success are important.

- (a) periodic achievement testing. Frequent monitoring of achievement is one of the variables found to be related to school effectiveness. It should be one of the first to be implemented because it can also serve as one of the main indicators of the success of the improvement program. Assistance from the central Steering Committee may be required for the development of appropriate testing materials.
- (b) distortion monitoring. Improvement programs elsewhere have frequently been criticized for focusing the attention of a school on teaching of the basics to the exclusion of other important objectives (e.g., Stedman, 1987). This effect can be prevented by specifying the other important objectives and monitoring success in their achievement. Since "an emphasis on higher order skills" was one of the variables found to be related to school effectiveness, inclusion of that as one of the variables for early

implementation could prevent distortion away from those objectives.

- (c) process monitoring. The process of school improvement itself should be under continual review to ensure that it does not drift into any of the various dysfunctional characteristics common to change programs, such as token implementation, routinization, minimum compliance, or goal displacement.

Step 5

Redesign.

On the basis of the feedback provided by the previous step, appropriate adjustments can be made to keep the improvement program both functional in its directions and vital in its purpose, enabling the focus of enough energy to accomplish changes in many deep-seated practices.

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APPENDIX A
I. TEST CONSTRUCTION

- A.1 Reading
- A.2 Arithmetic
- A.3 Writing
- A.4 Attitudes

Table A.1.1

Composition of Pilot Test Forms
and Final Test Form
Reading

Reading Aspect	Content	Pilot Form			Final Form
		A	B	C	
Vocabulary	Communication, Social Sciences	8(3,2,3)	8(3,2,3)	7(3,2,2)	7
	Health, Natural Sciences	8(2,3,3)	8(2,3,3)	7(2,2,3)	6
	Mathematics	2(1,1,0)	1(1,0,0)	2(1,1,0)	2
Reading Comprehension 1	Communication, Social Sciences	3(2,0,1)	2(2,0,0)	5(3,1,1)	2
	Health, Natural Sciences	4(2,2,0)	4(1,2,1)	2(1,1,0)	3
	Mathematics	0	1(1,0,0)	0	1
Reading Comprehension 2	Social Sciences	0	1-3 (3,0,0)	1-2(2,0,0)	1-3
	Natural Sciences	2-6(3,0,3)	1-3(3,0,0)	1-3(0,0,3)	1-3

^a n(x,y,x) - number of items (easy, intermediate, difficult).

^b 1-3 - one long passage with three comprehension questions.

Table A.1.2

Means and Standard Deviations
Pilot Test Forms
Reading

Form	Class Effectiveness	Number of Students	Vocabulary	Reading Comprehension 1	Reading Comprehension 2
A	High	20	11.75(65.3%)	5.10(72.8%)	2.65(44.2%)
			2.21	1.00	1.31
	Low	24	5.71(31.7%)	2.96(42.3%)	0.75(12.5%)
			2.73	1.43	0.83
B	High	26	9.65(56.8%)	5.89(84.1%)	3.81(63.5%)
			3.01	1.15	1.30
	Low	27	4.85(28.5%)	4.07(58.1%)	1.71(28.5%)
			2.89	1.78	1.27
C	High	34	9.06(56.6%)	5.79(82.7%)	3.00(60.0%)
			2.58	0.83	1.26
	Low	19	6.37(39.8%)	4.79(68.4%)	2.37(47.4%)
			2.10	1.00	1.22

^aMean ^bStandard Deviation

NOMBRE _____ EDAD _____ SEXO _____
ESCUELA _____ FECHA _____
CURSO _____

PARTE I

VOCABULARIO

INSTRUCCIONES

En cada pregunta, busca la palabra que se define. Cuando la encuentres subráyala.
Vamos a hacer algunos ejemplos para que sepas cómo vas a contestar.

I. Animal que da leche.

- 1 - Mosquito 2 - Gallina 3 - Vaca 4 - Paloma 5 - Sapo

II Se lleva en los pies.

- 1 - Media 2 - Guante 3 - Reloj 4 - Pulsera 5 - Sombrero

III Sacar el sucio

- 1 - Frotar 2 - Limpiar 3 - Coser 4 - Poner 5 - Ver

IV Lo contrario de aquí.

- 1 - Ese 2 - Lejos 3 - Mañana 4 - Cerca 5 - Allá

NO DES VUELTA A LA PAGINA HASTA QUE SE TE AVISE

VOCABULARIO

PARTE I

En cada pregunta pasa una raya debajo de la palabra que se define.

1. Llevar de un sitio a otro.
1 — Acumular 2 — Transportar 3 — Proteger 4 — Probar 5 — Mezclar
2. Que puede avanzar con rapidez.
1 — Veloz 2 — Lento 3 — Suave 4 — Raro 5 — Valiente
3. Parte de algo que no se aprovecha.
1 — Economía 2 — Beneficio 3 — Desperdicio 4 — Perjuicio 5 — Abono
4. Volver hacia atrás
1 — Atravesar 2 — Resolver 3 — Retroceder 4 — Perjuicio 5 — Avanzar
5. Que ha perdido algo de su color natural
1 — Colorado 2 — Pálido 3 — Delgado 4 — Moreno 5 — Pardo
6. Edificio Lujoso.
1 — Palacio 2 — Torre 3 — Almacén 4 — Granja 5 — Villa
7. Lo contrario de suave.
1 — Sucio 2 — Tierno 3 — Manso 4 — Cálido 5 — Aspero
8. Lo que se siente después de un trabajo largo y difícil.
1 — Virtud 2 — Costumbre 3 — Servicio 4 — Verdad 5 — Fatiga
9. Se refiere al último de un grupo.
1 — Anterior 2 — Interno 3 — Unico 4 — Final 5 — Inicial
10. Traer hacia sí.
1 — Contraer 2 — Atraer 3 — Descargar 4 — Distraer 5 — Preferir
11. Se refiere a la mujer.
1 — Femenina 2 — Niña 3 — Masculino 4 — Vejez 5 — Matrimonial
12. Gran cantidad.
1 — Presencia 2 — Elevación 3 — Abundancia 4 — Medida 5 — Peso
13. Produce muchos frutos.
1 — Estéril 2 — Fértil 3 — Árido 4 — Extenso 5 — Ancho
14. Cuidar de los peligros.
1 — Proteger 2 — Merecer 3 — Aconsejar 4 — Educar 5 — Atraer
15. Sirve para algo.
1 — Usual 2 — Salvaje 3 — Servido 4 — Especial 5 — Util

PARTE II

LECTURA COMPRENSIVA I

INSTRUCCIONES

En cada oración busca la palabra que falta. Cuando la encuentres SUBRAYALA.
Vamos a hacer algunos ejercicios para que sepas cómo vas a contestar.

I. Teníamos tanta sed que decidimos salir a buscar

1 – Gas 2 – Vinagre 3 – Agua 4 – Sal 5 – Oxígeno

II. A María le gustó mucho la muñeca que vió en la juguetería. Ella le pidió dinero a su mamá y la

1 – Meció 2 – Bañó 3 – Vendió 4 – Compró 5 – Gastó

NO DES VUELTA A LA PAGINA HASTA QUE SE TE AVISE

LECTURA COMPRENSIVA I

PARTE II

En cada pregunta pasa una raya debajo de la palabra que falta.

I Iba corriendo entre los matorrales y se le rompió la

- 1 — Cama 2 — Falda 3 — Pizarra 4 — Casa 5 — Niña

II. Don Leonardo, el maestro, ha logrado enseñarnos las operaciones matemáticas básicas mediante la

- 1 — Vida 2 — Práctica 3 — Salida 4 — Pieza 5 — Lista

III. Este año ha llovido muy poco pero a pesar de ésto, la cosecha será

- 1 — Escasa 2 — Abundante 3 — Difícil 4 — Innecesaria 5 — Nueva

IV. No podemos ver el sol en este día porque está muy

- 1 — Azul 2 — Solo 3 — Florido 4 — Nublado 5 — Bonito

V. La hicotea, réptil que vive en las costas de nuestra isla, está desapareciendo debido a que tiene poca

- 1 — Extensión 2 — Venta 3 — Carne 4 — Protección 5 — Contaminación

VI. La niña tiene mucho sueño, fíjate cómo abre la boca para

- 1 — Andar 2 — Enseñar 3 — Bostezar 4 — Bordar 5 — Sudar

INSTRUCCIONES:

Lee el párrafo, luego en cada una de las preguntas busca la respuesta correcta y pásale una raya. Si es necesario lee el párrafo otra vez.

Paco había quedado huérfano desde muy tierna edad, de modo que tuvo que arreglárselas por su cuenta para poder vivir. Se ganaba la vida ayudando a llevar paquetes a encofetadas señoras; otras veces vendiendo periódicos y en otras lustrando los zapatos de los transeúntes.

1.— ¿Por qué trabajaba Paco?

- a) Porque era divertido
- b) Porque deseaba ser útil
- c) Porque necesitaba ganar dinero
- d) Porque una señora lo obligaba
- e) Porque debía mantener a sus padres

2.— ¿Qué significa en el párrafo ARREGLARSE LAS POR SU CUENTA?

- a) Arreglar cosas dañadas
- b) No respetar a nadie
- c) Sacar las cuentas de su negocio
- d) Vagabundear
- e) Guiarse a sí mismo

Lee el párrafo. Después busca la respuesta correcta a las preguntas y pásale una raya debajo.

- I. En el inicio de la conquista, Santo Domingo era la ciudad más próspera de América. En poco tiempo se convirtió en el centro de las actividades de los conquistadores. Llegó a ser lugar de interés para los piratas, quienes la invadieron con frecuencia. Para evitar nuevas invasiones, se edificaron las murallas de Santo Domingo.

1.— ¿A cuál período histórico se refiere el párrafo?

- a) A la Independencia.
- b) A la conquista.
- c) Al descubrimiento
- d) A la anexión
- e) A la invasión haitiana.

2.— ¿Por qué construyeron la muralla de Santo Domingo?

- a) Por las invasiones de los piratas.
- b) Porque deseaban adornar la ciudad.
- c) Porque el Mar Caribe inundaba la ciudad.
- d) Porque Santo Domingo era más vieja.
- e) Para evitar las actividades de los conquistadores.

3.— ¿Por qué Santo Domingo era tan importante en ese tiempo?

- a) Porque era el centro de actividades de los piratas.
- b) Porque en esta ciudad se organizaban los conquistadores.
- c) Porque había muchas ruinas interesantes.
- d) Porque en esta ciudad se organizaban paseos turísticos.
- e) Porque tenía la muralla más grande.

- II. El cocodrilo es el mayor de todos los reptiles. Para nadar se vale de su larga y poderosa cola. Lleva el extremo de su hocico fuera del agua para poder respirar. Es un animal carnívoro y su enorme boca está poblada de dientes grandísimos. Aunque tenga la boca cerrada, siempre asoma algún diente y parece que el animal sonríe.

1.— ¿Cuál de las siguientes afirmaciones ilustra mejor el tamaño relativo del cocodrilo?

- a) Es el mayor de todos los animales.
- b) Es el más grande de todos los reptiles.
- c) Es el más grande de los animales carnívoros.
- d) Es tan grande que no puede medirse.
- e) Parece más grande cuando está dentro del agua.

2.— ¿Cuál de los siguientes es el mejor título para el párrafo?

- a) Los reptiles carnívoros.
- b) Los grandes animales.
- c) El reino animal.
- d) El cocodrilo.
- e) El tamaño del cocodrilo.

3.— ¿De qué manera nada el cocodrilo?

- a) El cocodrilo no nada.
- b) Usa su cola para nadar.
- c) Usa su hocico para nadar.
- d) Usa sus aletas para nadar.
- e) Usa las patas como si fueran aletas.

ESPERA MAS INSTRUCCIONES.

Table A.2.1

Composition of Pilot Forms
and Final Test Forms
Arithmetic

Topic	Pilot Form		Final Form
	A	B	
Addition			
Whole numbers	1	1	2
Fractions	1	2	1
Mixed fractions	1	0	0
Decimals	1	1	1
Subtraction			
Whole numbers	1	1	2
Fractions	1	1	1
Mixed fractions	1	1	0
Decimals	1	1	1
Multiplication			
Whole numbers	1	2	3
Fractions	1	0	1
Mixed fractions	1	2	0
Division			
Whole numbers	1	1	2
Definition of a Fraction	1	0	1
Conversions			
Decimals to fractions	1	0	0
Fractions to decimals	0	1	1
Roman numerals to numbers	1	0	1
Numbers to roman numerals	1	1	1
Place Value	2	3	1
Word Problems with			
Whole numbers	1	2	0
Fractions/decimals	1	1	1
Sets			
Union and intersection	<u>2</u>	<u>0</u>	<u>0</u>
Total Number of Test Items	22	21	20

Table A.2.2

Means and Standard Deviations
Pilot Test Forms
Arithmetic

Class Effectiveness:	Form			
	A		B	
	High	Low	High	Low
Number of Students	26	23	34	15
Mean	7.08(32.2%)	6.04(27.4%)	9.59(45.7%)	5.80(27.6%)
Standard Deviation	2.50	3.74	2.71	1.83

PRUEBA DE MATEMATICA

NOMBRE _____ ESCUELA _____

EDAD _____ SEXO _____

FECHA _____

Realiza las operaciones siguientes y encierra en un círculo la respuesta correcta.

$$3 + 5 + 2 =$$

- a) 11
- b) 12
- c) 10
- d) 9

$$9 + 5 - 3 =$$

- a) 17
- b) 11
- c) 8
- d) 14

Si Juan tiene 20 bolitas y Pedro tiene 4: ¿cuántas bolitas tienen en total? Realiza la operación para seleccionar la respuesta correcta.

- a) 34
- b) 14
- c) 42
- d) 24

NO DES VUELTA A LA PAGINA HASTA QUE SE TE AVISE

$$72 + 36 =$$

- a) 108
- b) 208
- c) 98
- d) 118

$$495 + 689 + 6$$

- a) 1190
- b) 1180
- c) 2000
- d) 1191

$$87 - 26 =$$

- a) 61
- b) 51
- c) 71
- d) 62

$$4598 - 2365 =$$

- a) 2232
- b) 2123
- c) 2133
- d) 2233

$$33 \times 7 =$$

- a) 221
- b) 331
- c) 131
- d) 231

$$5049 \times 8 =$$

- a) 41292
- b) 40292
- c) 41392
- d) 40392

$$8732 \times 50 =$$

- a) 436600
- b) 426600
- c) 446600
- d) 435600

$$896 \div 7 =$$

- a) 138
- b) 128
- c) 129
- d) 139

$$612 \div 34 =$$

- a) 17
- b) 18
- c) 23
- d) 578

$$\frac{3}{8} + \frac{2}{8} =$$

- a) $\frac{5}{16}$
- b) $\frac{5}{8}$
- c) $\frac{11}{10}$
- d) $\frac{6}{64}$

$$\frac{4}{5} - \frac{1}{5} =$$

- a) $\frac{3}{10}$
- b) $\frac{6}{9}$
- c) $\frac{3}{5}$
- d) 3

$$\frac{2}{3} \times \frac{1}{5} =$$

- a) $\frac{13}{15}$
- b) $\frac{10}{3}$
- c) $\frac{3}{10}$
- d) $\frac{2}{15}$

La fracción $\frac{8}{10}$ expresado en decimal es:

- a) 0.80
- b) 0.4
- c) 8
- d) 0.004

El número que corresponde a 3 millares, 2 centenas, 5 decenas y 1 unidad

- a) 1523
- b) 2531
- c) 3251
- d) 3051

$$1.26 + 0.87 =$$

- a) 3.14
- b) 2.13
- c) 3.13
- d) 2.14

$$6.98 - 5.78 =$$

- a) 1.2
- b) 0.2
- c) 1.3
- d) 0.3

Fui a comprar un cuaderno por \$0.75, un borrador por \$0.35, un lápiz por \$0.15, un bolígrafo por \$1.40 y un helado por \$0.50; al pagar con billete de \$5.00 ¿Cuánto dinero me tenían que devolver?

- a) \$2.75
- b) \$1.75
- c) \$2.85
- d) \$1.85

Qué fracción de la figura ha sido sombreada

- a) $\frac{1}{3}$
- b) $\frac{2}{3}$
- c) $\frac{1}{2}$
- d) $\frac{2}{12}$



El número romano **CL** escrito en número arábigo corresponde al:

- a) 150
- b) 100
- c) 30
- d) 50

El número ¹⁰⁹~~149~~ escrito en número romano corresponde al:

- a) CIX
- b) CIL
- c) MIL
- d) MIXL

Table A.3.1

Composition of Pilot Forms
and Final Test Form
Writing

	Pilot Form		Final Form
	A	B	
Use of Letters:			21 ^a
a) b-v; h-o; c-k-q			
b) h-o;j-g;s-c;c-k-q; r-rr; y-ll	8	30	
Use of Capitals	8		8
Word			
Accentuation	12		6
Punctuation	3		3
Ordering	3		0
Concordance of Words	0	7	0
Total Number of Items	<u>34</u>	<u>37</u>	<u>38</u>

^a11 of the 21 items involved selecting a particular letter from among the choices provided: 6 for g or j (items 10-15); 5 for c-k-q (items 16-20). For the remaining items (21-30), the student was to provide the correct answer unaided, that is, without any prior choices from which to select.

Table A.3.2

Means and Standard Deviations
Pilot Test Forms
Writing

Class Effectiveness:	Form			
	A		B	
	High	Low	High	Low
Number of Students	49	30	36	33
Mean	19.7(57.9%)	11.9(34.9%)	27.1(73.3%)	23.4(63.2%)
Standard Deviation	4.69	2.78	4.69	4.92

PRUEBA DE ESCRITURA

NOMBRE _____ SEXO _____ EDAD _____

ESCUELA _____

FECHA _____

I. Marca el acento ortográfico a las palabras que lo llevan
y subraya sólo aquellas palabras que no lo llevan.

1. bola

4. lloran

2. jabon

5. lampara

3. maquina

6. util

II. Ponle su nombre al lado a cada uno de estos signos.

7. ¿? _____

8. () _____

9. ; _____

III. Escribe g o j a las palabras que aparecen incompletas.

10. Lidia se va al cole__io temprano.

11. El viernes es el __uego de estrellas.

12. Este es un calle__ón sin salida.

13. Llegamos tarde porque nos co__ió el sueño.

14. No hay azúcar porque se dañó el in__enio.

15. Tía se dió un golpe en la pierna y está co__a.

IV. Escribe c, q, ó k a las palabras que aparecen incompletas.

16. La __ompañía de teléfonos es Codetel.
17. Maridalia __anta bonito.
18. Los españoles con__uistaron a México.
19. Yo compré un __ilo de salsa de tomate.
20. Luís __uiere mucho a su maestra.

V. Completa los espacios en blanco en las siguientes oraciones.

21. El niño tiene __ambre.
22. Ganamos on__e a cuatro.
23. Me gustan los pa__teles en hoja.
24. El niño brincó la cer__ca.
25. Lleva esta carta al co__eo.
26. Quisque__a que indómita y brava.
27. Qué buena sabe la cebo__a.
28. Los tres Re__es Magos vienen pronto.
29. El niño es molestos__.
30. Los profesores están contento__.

VI. Repite el párrafo que aparece a continuación, y escribe las letras mayúsculas donde correponden.

pili perez es la más sabia de los cuatros hermanos perez. ella ya ha leído varios libros de la profesora altagracia. hoy la direc tora le prestó un libro sobre santo domingo.

Table A.4.1

Means and Standard Deviations
Pilot Test Forms
Attitudes

Sub-Scale:	Form					
	A			B		
	Self	Family	School	Self	Family	School
Number of Items	17	15	21	18	15	18
Number of Students	75	75	75	93	93	93
Mean	38.08	37.35	51.87	42.84	39.15	43.02
Standard Deviation	4.30	5.95	5.44	3.46	4.20	4.23

Table A.4.2

Means and Standard Deviations
Second Pilot Test Form
Different Administration Modes
Attitudes

Sub-Scale:	Administration Mode					
	Group			Individual		
	Self	Family	School	Self	Family	School
Number of Items	17	18	17	17	18	17
Number of Students	101	101	101	63	63	63
Mean	37.88	46.58	41.72	39.10	47.86	42.55
Standard Deviation	4.39	6.03	3.52	4.76	6.53	4.15

NUM _____

ESCUELA _____

NOMBRE _____ SEXO _____

El presente folleto trata sobre cosas con las cuales podrías estar o no de acuerdo. Queremos que des tú opinión sobre ellas. No es un examen, por lo tanto, lo que pueda contestar tú compañero no será necesariamente, lo que tú piensas sobre lo mismo, porque no hay respuestas buenas ni malas.

Contesta todas las preguntas y hazlo con la mayor sinceridad.

Te voy a dar dos ejemplos de cómo contestar este folleto: Encontrarás varias afirmaciones y para dar tú opinión tres caritas que significan:



= SI



= NO



= NO SE

PRIMER EJEMPLO:

Si la afirmación fuera:

1) A mí me gusta el helado de chocolate.

-Si tú respuesta fuera NO,
tacharías la carita....



-Si tu respuesta fuera SI,
tacharías la carita....



SEGUNDO EJEMPLO: (Pon mucha atención a este caso)

Si la afirmación fuera:

1) No me gusta el helado de chocolate.

-Si tu respuesta fuera que SI, que
te gusta el helado de chocolate,
tacharías la carita....



-Si tu respuesta fuera que NO, que
no te gusta el helado de chocolate,
tacharías la carita....



Muy bien, ahora vas a trabajar solo. Si tienes alguna pregunta que hacer es el mejor momento... Recuerda no debes dejar ninguna afirmación sin contestar, preferiblemente con SI o con NO. Para responder solo tienes que tachar con una X la carita que corresponda.

1. Me gusta ayudar a mi compañeros de clases cuando ellos lo necesitan	  
2. No me gusta mi cara.	  
3. No valgo nada.	  
4. Me gustan las fiestas que hacen en la escuela.	  
5. Me molesta que me critiquen.	  
6. Mi papá participa en las actividades escolares.	  
7. No me gusta como tengo la nariz.	  
8. Soy demasiado bajito.	  
9. Mis compañeros me ayudan cuando tengo problemas.	  
10. Mi mamá revisa mis cuadernos.	  

11. Me incomodo con facilidad.	  
12. No me gusta mi voz.	  
13. Tengo buenos amigos en la escuela.	  
14. Mi papá me ayuda con mis tareas escolares.	  
15. Me gusta jugar con mis compañeros de la escuela.	  
16. Mis hermanos revisan mis tareas.	  
17. Mi papá me pregunta cómo me va en la escuela.	  
18. Me gustaría que en mi curso hubieran menos niños.	  
19. Soy demasiado gordo (a).	  
20. Mi papá siempre está atento a cómo voy a la escuela.	  

21. Mis hermanos me preguntan cómo me va en la escuela.	  
22. Sé que no caigo bien entre mis compañeros.	  
23. No entiendo mucho a mi maestra.	  
24. Mi papá habla con mi maestra (o) sobre lo que hago en la escuela.	  
25. En la escuela no hago todo el esfuerzo necesario.	  
26. A muchos niños no les gusta jugar conmigo.	  
27. Mis hermanos se apuran para que yo vaya a la escuela.	  
28. Muchas personas no me entiende.	  
29. Mis hermanos participan en las actividades escolares.	  
30. Me gusta ayudar a mis compañeros en los exámenes.	  

Table A.4.1
Means and Standard Deviations
Pilot Test Forms
Attitudes

Sub-Scale:	Form					
	A			B		
	Self	Family	School	Self	Family	School
Number of Items	17	15	21	18	15	18
Number of Students	75	75	75	93	93	93
Mean	38.08	37.35	51.87	42.84	39.15	43.02
Standard Deviation	4.30	5.95	5.44	3.46	4.20	4.23

Table A.4.2
Means and Standard Deviations
Second Pilot Test Form
Different Administration Modes
Attitudes

Sub-Scale:	Administration Mode					
	Group			Individual		
	Self	Family	School	Self	Family	School
Number of Items	17	18	17	17	18	17
Number of Students	101	101	101	63	63	63
Mean	37.88	46.58	41.72	39.10	47.86	42.55
Standard Deviation	4.39	6.03	3.52	4.76	6.53	4.15

APPENDIX B
SOCIO-ECONOMIC DATA

B.1 Parents' Occupation

B.2 Number of Brothers and Sisters

Table B.1

Parent's Occupations
Six Sample Schools^a

		School Pairs											
		1A		1B		2A		2B		3A		3B	
Occupation	Parent:	F	M	F	M	F	M	F	M	F	M	F	M
Unemployed		0	13	0	10	0	16	5	7	0	17	0	13
Government Employee		7	0	1	0	4	1	9	4	2	1	6	1
Private Company Employee		14	0	7	0	12	2	8	5	12	8	8	6
Policeman/Armed Forces		3	0	2	0	3	0	1	0	3	0	3	0
Security Guard		0	0	0	0	0	0	0	0	2	0	0	0
Shopkeeper		1	0	0	0	3	1	1	0	0	0	0	1
Bus/Truck Drive, Chauffer		4	0	0	0	1	0	1	0	1	0	0	2
Mechanic		0	0	1	0	0	0	1	0	4	0	0	0
Bricklayer/Carpenter/ Plumber		0	0	3	0	1	0	4	0	1	0	5	0
Labourer		0	0	1	0	0	0	0	0	0	0	3	0
Maid/Waitress		0	1	0	0	0	4	0	11	0	2	0	8
Dressmaker/Tailor		0	1	0	2	0	4	0	0	0	3	1	2
Nurse/Teacher		0	2	0	0	0	0	0	0	0	0	0	1

^a Data provided by a randomly selected class of students in each school.

^b F-Father; M-Mother.

Table B.2

Number of Brothers and Sisters
Six Sample Schools

Number	School Pairs					
	1A	1B	2A	2B	3A	3B
0	0	0	2	0	0	0
1	2	2	6	1	3	2
2	9	3	4	4	3	3
3	8	8	5	7	3	6
4	6	5	5	4	5	3
5	2	2	1	3	2	6
6	1	0	0	2	2	4
7	1	0	2	4	1	4
8	0	0	2	1	0	2
9	0	0	0	1	0	0
10	0	0	3	1	1	0
11	1	0	0	0	1	0
12	0	0	0	1	0	1
---	---	---	---	---	---	---
19	0	0	0	0	0	1

^aData provided by a randomly selected class of students in each school.